



ZANZIBAR PROTECTORATE.

ADMINISTRATIVE
REPORTS

For the Year 1927.

ZANZIBAR :

PRINTED AND PUBLISHED BY THE GOVERNMENT PRINTER.

1928.

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Zanzibar Protectorate.

REPORT ON THE ADMINISTRATOR-GENERAL'S DEPARTMENT, ZANZIBAR AND PEMBA FOR THE YEAR 1927.

1. *Revenue.*—The total revenue payable to Government from all sources was as follows:—

Administration of Deceased Estates—

	Rs.	Cts.	Rs.	Cts.
Administrator-General's fees ...	47,775	15		
Interest on Current Account and Fixed Deposit ...	5,928	25		
			53,703	40
Estate Duty			74,744	04

Administration of Trust Estates—

Fees ...	19,255	28		
Interest on Current Deposit Account	1,768	56		
			21,023	84
Registration of Documents			90,803	64
Land Office. Rent of Land and Buildings			69,783	04
			Rs. 3,10,057	96

2. *Administration of Deceased Estates, Zanzibar and Pemba.*—

The fees collected during the year amounted to Rs. 47,775-15, which compares very favourably with the revenue collected under this head during 1926. As was pointed out in the Report for 1926, the figures for that year were exceptional. The revenue for the previous four years was:—

	Rs.
1923 ...	45,308
1924 ...	33,163
1925 ...	26,683
1926 ...	50,476

The administration of 518 new estates was undertaken by this Department during the year, in addition to the estates of previous

years in course of administration. Estates to the number of 586 were wound up, leaving 374 estates in all in course of administration, as follows:—

	Estates completed.	In course of administration.	Fees collected.	
			Rs.	Cts.
Zanzibar	356	109	31,697	79
Pemba	230	265	11,257	99
	<u>586</u>	<u>374</u>	<u>42,955</u>	<u>78</u>

The number of estates completed during the period under review exceed by 106 the number completed during the previous year, which constituted a record up to that date.

The Pemba figures show a considerable increase over the previous year, both in the number of estates completed and in the revenue collected.

In addition to the above-mentioned estates administered in my Zanzibar and Pemba Offices, the administration of 565 estates not exceeding the sum of Rs. 500 each in gross value was completed through the Assistant District Commissioners of certain districts, as my agents, whose files are all sent to this Department for checking and approval; thus making a grand total of 1,151 estates completed during the year under review.

Details of the District Administration are as follows:—

	Estates completed.	Administration fees and Estate Duty.	
		Rs.	Cts.
Weti	167	2,057	49
Mkoani	104	1,145	74
Mkokotoni	141	993	74
Chwaka	48	465	37
Mwera	105	1,025	86
	<u>565</u>	<u>5,688</u>	<u>20</u>

The Weti and Chwaka figures show substantial increases, both in the number of estates completed and the revenue collected, otherwise the figures call for no comment.

The Administrator-General's (Amendment) Decree, 1927, No. 18 of 1927, published in the *Official Gazette* of 5th November, 1927, extended the summary powers of the Administrator-General to the administration of estates not exceeding Rs. 1,500 and to the sale of property not exceeding Rs. 3,000 in gross value, which not only tends

to facilitate the administration of these comparatively small estates but also results in substantial savings to such estates in Court fees and other charges.

3. *Estate Duty*.—Duty under this head amounted to Rs. 74,744-04, and was recovered not only in respect of estates administered by me and my agents, as above mentioned, but also in respect of estates administered by private executors or administrators and foreign Consuls.

Of this figure my district agents contributed Rs. 868-83.

The figures for the previous four years are:—

	Rs.
1923	62,047
1924	89,711
1925	1,66,211
1926	83,880

The decrease is due largely to the decrease in value of shamba and house property.

4. *Trust Estates, Zanzibar and Pemba*.—There are 313 estates in my charge as Public Trustee; 23 estates were handed over to wards on attaining majority and 31 new estates were accepted by the department.

The revenue received in respect of these estates amounted to Rs. 1,75,667-81, and fees payable to Government amounted to Rs. 19,255-28.

The increase in fees is due to the increase in revenue and to the revised scale of fees which came into force during the year.

The figures for the previous four years are:—

	Revenue.	Fees.
	Rs.	Rs.
1923	1,56,915	7,846
1924	1,64,674	8,074
1925	1,81,059	9,051
1926	1,53,440	11,271

The increase in revenue is due partly to the recovery of a large amount of arrears of interest and partly to the fact that better clove and coconut crops were obtained from the shambas.

There are 345 shamba properties directly or indirectly under my charge. The increased facilities, through road construction, for visiting a number of shambas has resulted in considerable benefit thereto, and the activities of dishonest overseers are now more easily controlled. The Public Trustee and I are now personally able to visit, periodically, a number of the shambas.

The Trust investments held by the Public Trustee on 31st December, 1927, were as follows:—

	Rs.	Cts.
Loan on Mortgage	5,27,465	50
Fixed Deposit with Bank	4,96,650	00
Current Account	57,254	15
Deposit with Treasury (Pemba Trust Estates)	41,163	91
Cash in hand:—		
Zanzibar	49	79
Pemba	13	97
	63	76
	11,22,597	32

Details of Zanzibar and Pemba Trust Estates are as follows:—

Estates. Shambas.			Funds.		Revenue.		Fees.	
			Rs.	Cts.	Rs.	Cts.	Rs.	Cts.
Zanzibar	192	140	10,05,919	44	1,43,591	53	15,684	15
Pemba	121	205	1,16,677	88	32,076	28	3,571	13
	313	345	11,22,597	32	1,75,667	81	19,255	28

5. *Registration of Documents.*—The total revenue for the year amounted to Rs. 90,803-64, being Rs. 70,207-50 from Zanzibar and Rs. 20,596-14 from Pemba; a decrease of Rs. 6,551-20 on last year's total, but an increase of Rs. 803-64 on the estimated amount for the year. The decrease may be ascribed to the fall in value of shamba and house property and to the fact that there were less deeds registered than there were in the previous year. The revenue for the previous four years was:—

	Zanzibar.	Pemba.	Total.
	Rs.	Rs.	Rs.
1923	85,089	20,192	1,05,281
1924	68,512	17,837	86,349
1925	76,860	27,613	1,04,473
1926	72,943	24,411	97,354

The total number of documents registered during the year, their nature and the revenue derived therefrom, including fees for searches, certified copies, attendances and stamped forms was as follows:—

Nature.	Zanzibar.		Pemba.	
	Number	Revenue.	Number.	Revenue.
Compulsory—		Rs. Cts.		Rs. Cts.
Mortgages	951	20,187 00	658	5,576 00
Sales	1,989	41,501 00	2,556	12,473 00
Leases	90	1,763 00	10	— —
Wakfs	23	999 00	22	234 00
Gifts	12	563 00	3	28 00
Agreements	18	103 00	28	98 00
Releases	24	340 00	—	— —
Miscellaneous	23	619 00	—	— —
Bills of Sale	1	15 00	—	— —
Non-Compulsory—				
Mortgages	—	— —	3	12 00
Sales	8	31 00	15	75 00
Leases	27	50 00	—	— —
Gifts	2	10 00	2	10 00
Agreements	6	26 00	3	— —
Attendances (174)		522 00	(68)	195 00
Powers of Attorney	6	30 00	120	600 00
Guarantees	10	134 00	73	183 00
Acknowledgment				
of debt	4	10 50	11	30 00
Receipts	2	10 00	—	— —
Awards	3	— —	—	— —
Decrees	3	10 00	—	— —
Wills	1	10 00	9	108 00
Miscellaneous	1	3 00	—	— —
Copies (81)		553 00	(29)	162 56
Searches		2,238 00		79 00
Papers		480 00		732 58
Total	3,204	70,207 50	3,513	20,596 14

The Assistant District Commissioners, as Deputy Registrars, contributed to the afore-going figures, as follows:—

District.	No. of Documents.	Fees.	
		Rs.	Cts.
Mkokotoni	216	873	75
Weti	1,150	5,825	75
Mkoani	895	4,753	83
	2,261	11,453	33

The total sum involved in mortgage transactions in Zanzibar was Rs. 16,86,961-12, as compared with Rs. 24,79,552-75 in 1926, and the value of properties sold was Rs. 36,10,824-50, as compared with Rs. 32,68,021-50.

A comparison with the two previous years shows a steady decrease in the number of documents registered. The figures for 1925 being 8,650 and for 1926, 7,891.

There were registered free of charge for the Zanzibar Government 30 documents in Zanzibar and 38 in Pemba.

6. *Registration of Marriages, Zanzibar and Pemba.—Marriages and Divorces (Mohamedan).—*The total number of marriages and dissolutions of marriage registered during the year was as follows:—

Marriages.	
District.	Number.
Zanzibar:—	
Town	339
Southern District	728
Northern District	303
	— 1,370
Pemba:—	
Weti	462
Chake Chake	560
Mkoani	337
	— 1,359
	—
Total	2,729

Dissolutions of Marriage.	
District.	Number.
Zanzibar:—	
Court	—
Town	304
Southern District	564
Northern District	239
	— 1,107
Pemba:—	
Weti	460
Chake Chake	462
Mkoani	302
	— 1,224
	—
Total	2,331

The Zanzibar returns show deceases in both marriages and divorces, whereas the Pemba returns show increases in both.

Christian marriages within the Town of Zanzibar during the year numbered 18, and in Pemba two.

7. *Land Office*.—The total revenue for the year amounted to Rs. 69,783-4, being Rs. 56,254-50 in respect of buildings and Rs. 13,528-54 in respect of land.

The revenue for the four previous years was as follows:—

	Buildings.	Land.	Total.
	Rs.	Rs.	Rs.
1923	48,732	9,531	58,283
1924	46,295	12,188	58,483
1925	46,933	13,483	60,416
1926	53,484	16,020	69,504

From the above figures it will be seen that the revenue in respect of buildings increased by Rs. 2,770 (which was Rs. 5,054 in excess of the estimated amount), whereas that in respect of land decreased by Rs. 2,492, (which was Rs. 972 below the estimated amount), leaving a net increase of Rs. 279.

The increase is due principally to arrears in respect of the year 1926 which were recovered as a result of actions taken in Court in 1927. The decrease is due partly to the difficulty experienced in collecting the small amounts due by poor hut tenants and the scarcity of money, and partly to the fact that the 1926 figures were inflated by the collection in that year of the abnormal arrears in respect of the years 1924 and 1925.

The City Survey of Zanzibar was completed by the Senior Surveyor in 1927, and the Land Office staff aided, for three weeks, in marking the Government-owned and lease-hold properties.

The Building Surveyor refers to this office all such applications for building as may affect the Government on the question of encroachments, rights-of-way ownership and damages pertaining to Government land in order that the Land Officer may safeguard Government interests as far as possible. All applications for erection of native huts on Government land pass through this office, and allotments are made in conjunction with the Building Surveyor.

This office has also to deal with claims and boundary disputes which arise in respect of Government properties. The inspection of the land and investigations in connection with such claims takes up a considerable amount of time, and frequently necessitates a careful enquiry into the early history, not only of the land in question, but also of the adjoining land and the noting and sifting of the evidence adduced.

During the year property to the value of Rs. 1,23,648 was purchased and acquired, which included five properties in Zanzibar of the value of Rs. 59,823 and 15 properties in Pemba of the value of Rs. 63,825.

A sum of Rs. 54,000 was expended during the year for rent of Houses and Lands (Head X. Miscellaneous, Item 23) leased by the Government for occupation by Government officers and for other public purposes in Zanzibar and Pemba. This vote is controlled, and the negotiations in connection with the majority of the leases and renewals thereof are conducted by me as Land Officer:

ASSESSMENT OF HOUSES UNDER THE STREET CLEANING AND LIGHTING
DECREE NO. 7 OF 1924.

An important branch of work of the Land Office is the assessment which takes place in January and July in each year, under the Street Cleaning and Lighting Decree, of the rateable value of property.

Owing to the depreciation in value of house-property in Zanzibar Town, many applications for re-assessment were submitted, and approximately 150 houses were re-assessed during the course of the year. The assessment entails inspection of the premises and the verification of the necessary particulars submitted by applicants.

8. *General.*—Mr. Parnall, the Administrator-General, proceeded on sick leave on the 11th August, 1927, and had not returned by the end of the year, during his absence I acted as Administrator-General.

Mr. Gordon, Assistant Administrator-General, was absent on local leave from 6th October to 3rd November, 1927; Capt. G. H. Shelswell-White, Assistant District Commissioner, Chake Chake, acted for him during that period.

I returned from leave on the 21st March, 1927.

All the members of my staff, both here and in Pemba, have rendered cheerful and loyal support.

A. R. HOLLIDAY,
Acting Administrator-General,

Zanzibar, 29th February, 1928.

Zanzibar Protectorate.

REPORT ON THE ELECTRICITY, RAILWAY AND WIRELESS DEPARTMENT

FOR THE YEAR 1927.

Electricity.—My estimated figure of Revenue for the year 1927 has proved to be too optimistic, for the actual receipts are approximately Rs. 20,000 below my forecast, but in view of the apparent general depression in trade in Zanzibar during the year under review the results of the twelve month's working may, I think, be considered satisfactory.

The increased units sold for lighting purposes amount to 33,669 and for power 140,286, making a total of 173,955 additional units. This brings the year's supply to 1,027,158.

The receipts for 1927 are Rs. 13,614 more than for 1926, and the generation costs have advanced Rs. 1,428; in other words, the receipts have risen 4.75 per cent and the generation expenditure 1.4 per cent only. The ratio of these two figures is, I think, satisfactory. The increases in the works costs occur under the following headings: Fuel Rs. 945, Maintenance and Repairs Rs. 1,775, Management and Office Staff Rs. 3,465.

The first of these increases is accounted for by the additional units generated, the second (Repairs and Maintenance) to additional overhauling of the older Diesel engines, and the third to revision of salaries. To set against these increases, savings have been effected in lubricating oils and stores and also in wages. The cost per unit sold has dropped for 12 cents to 10 cents.

In my last annual report I said that the modern system of house wiring with cab-tyre sheathed cable continued to give excellent results, but we have recently made the unpleasant discovery that white ants attack the insulation of this type of wire. This fact is, to me, exceedingly surprising, for, in my somewhat lengthy experience in the tropics, I have never before known white ants attack any class of rubber covered wires. It appears that up to now the damage has occurred in three buildings only, unfortunately three of the most important ones in Zanzibar, i.e., His Highness the Sultan's Palace, the Residency and the Peace Memorial. In each case these buildings are infested with the insects from top to bottom. A careful examination of all the premises wired with the C.T.S. system is being made, and up to the time of writing it seems that only the premises I have mentioned are infected.

The sliding scale system of charging for power current introduced in 1926, has resulted in the manner I hoped it would, i.e., that far more units for power purposes have been sold to the general public at (in some cases) rates as low as .86 of an anna per unit with very little additional cost to the Government. In fact the only actual additional cost, caused by the greater supply of units, is the figure under fuel, which is Rs. 945, and for this sum 173,955 more units have been sold.

The new scale of power charges has, in fact, increased the "Load Factor" of the Station, and, as in my previous reports I have not mentioned this, it will not be out of place if I explain what the load factor is:

The period taken is one year, therefore the annual load factor, or load factor for the year, is the ratio of the actual output during the year to that output which would have been obtained had the maximum load registered been maintained continuously* throughout the year.

Thus, annual load factor, in per cent

$$\frac{\text{Actual units generated} \times 100}{\text{Maximum demand in kilowatts} \times (365 \times 24) \text{ hours.}}$$

A bad load factor involves the use of relatively large plant operating at light and inefficient loads; but with a high load factor all the elements of expense that enter into the production of power are at a minimum.

The total cost of management and operation is practically constant, but the cost per unit net output decreases as the load factor increases.

The load on an electricity station is never constant for more than a very short period, and usually varies throughout the twenty-four hours in the following manner: During the daytime it is low, then as evening comes on it gradually builds up to a maximum, after which it falls steadily until about midnight, when the very low night load is reached.

The amount of variation in the load has a very important effect on the cost of producing power, and since it differs considerably for different stations, due to the nature of the area supplied (industrial or residential), it becomes necessary, in order that fair and instructive comparisons may be made with different stations, and the working of different years, to have some method of taking these load variations into account.

This is done by comparing the average load over a period with the maximum load registered (for one hour usually) during that period, and the result is termed the load factor.

In the case of this undertaking the load factor is less than 15 per cent, whereas in English manufacturing towns such as Huddersfield, Hull, etc., it is as high as 33.33 per cent.

During the year's working no serious interruptions have occurred to the supply of electricity during the periods of lighting demand. Out of the total number of 8,760 hours working of the plant, slight failures, amounting to 39.5 minutes, were reported. These failures in the majority of cases did not exceed five minutes' duration and were caused by "short circuits" on the mains and distributors. No interruptions to the supply were caused by accidents to the Power Station plant.

Apart from the usual routine work at the Power Station, the complete overhaul of Engine No. 4 was undertaken, including the removal of the crankshaft, re-metalling main bearings, etc. Engine No. 6 was partly dismantled and all principal bearings adjusted. Engine No. 7, installed during 1926 and put into commission during November of that year, has needed very little attention beyond the usual minor adjustments.

Owing to improved methods of filtration and recovery introduced during the year, it has been possible to reduce the cost of lubricating oil from .22 annas per unit sold in 1926 to the low figure of .15 for this year.

The results of the year's working are shown in Tables 1 and 2.

Railway.—The passenger receipts of the Railway have again suffered severely through road transport competition. Throughout most of the year motor-car fares from the Town to Bububu were kept down to the same as the third class train fare, i.e., annas 3. In the circumstances, it was only to be expected that the majority of the people preferred to make the journey by car. Approximately 90 per cent of those who travelled by the railway brought head-loads of produce with them.

The end of the year saw the completion of the haulage of sand for the Harbour Works reclamation, this brings to an end seven years' work in connection with the scheme. It may not be out of place to record here that, in addition to carrying out the major portion of the reclamation, the Railway Department has transported all rock from the Chukwani Quarry, hard stone from Bet-el-Ras and all the reinforced concrete piles, beams, etc., from Saateni to the site. At times this work has been very exacting, and I should like to record here the good work done by the running staff of the department and the workshop staff.

During the year the haulage of sand and rock for the "Hollis" Road was completed.

I attach a statement (see Table III) showing the results of the year's working.

Telephones.—Considerable alterations have been undertaken to the district telephone lines. The re-routing of these lines has reduced maintenance charges very considerably and at the same time improved the reliability of the telephone service.

At the latter part of the year it was necessary to remove the Main Telephone Exchange to a new position on the roof of the Government Offices. The removal of the Exchange switchboard has allowed of the re-arrangements of subscribers circuits in such a manner that testing can now be carried on without delay.

Wireless Stations, Zanzibar and Pemba.—The chief feature of the year's Wireless working was the installation of the necessary apparatus for the reception of the British Official Press messages transmitted by the Rugby Station. The receiver for this work was specially designed and constructed by the Marconi Company; that it has proved remarkably efficient is witnessed by the fact that although atmospheric disturbances in Zanzibar are probably as bad as, if not worse than, anywhere else, hardly a word of the official messages has been missed during the whole twelve months. On a quiet night the signals, when using ordinary headphones, are audible three hundred yards away from the Station.

The support given to the daily issue of wireless news by the general public has been disappointing, but I do not think this is surprising, seeing that the Official Press is nearly always strictly confined to British politics or events happening in Britain or her Colonies. To the cosmopolitan population of Zanzibar, the messages are dull.

A certain amount of trouble was experienced during the year in the Zanzibar Station owing to a failure of the motor-generator, temporary measures were taken to overcome the trouble and a new prime mover has been placed on order.

STATISTICS OF WIRELESS MESSAGES FOR THE YEAR, 1927.

Received from.			Sent to.		
Pemba	...	2,883	Pemba	...	3,567
Kenya and Uganda	...	488	Kenya and Uganda	...	380
Tanganyika Territory	...	21	Tanganyika Territory	...	28
Ships	...	447	Ships	...	143
<hr/> Total 3,839			<hr/> Total 4,118		

Accounted during the year as follows:—

	Rs.	Cts.
Wireless Telegraph earnings	...	7,947-63*
Subscriptions for Press Wireless	...	672-50
<hr/> Total Rs.		8,620-13

*NOTE:—Estimate Rs. 6,000 only.

R. WITHYCOMBE,
Director of Electricity, Railway and Wireless.

TABLE I.
Analysis of the Working Costs of the Generation of Electricity, 1926 and 1927.

	Fuel.		Lubrication Oil and Stores.		Maintenance and Repairs.		Wages of Workmen, etc.		Management and Office Staff.		Total Costs.		Cost per Unit Sold.		Total Receipts.		Total Units Sold.
	Rs.	Cts.	Rs.	Cts.	Rs.	Cts.	Rs.	Cts.	Rs.	Cts.	Rs.	Cts.	Rs.	Cts.	Rs.	Cts.	
1926.	20,343	51	12,347	10	11,024	49	18,048	00	29,998	97	100,762	07	0	12	287,716	62	568,471 284,732 853,203 Light Power
1927.	30,288	54	9,712	28	12,799	84	16,026	00	33,463	75	102,290	41	0	10	301,330	74	602,140 425,018 1027,158 Light Power

TABLE II.

Year.	Receipts.	Recurrent Expenditure.	Profit.	Capital Expenditure during year.	Capital written off during year.	Nett Capital Expenditure at end of year.
1926	£19,904	£10,795	£9,109	£15,500	£4,067	£69,538
Profit in 1926—£9,109+Services to Government £1,000— Appropriate as follows: 7% Depreciation on £58,105 = £4,067 Interest on £58,105 @ 5% = £2,905 Pension Contributions = £ 500 Surplus £2,637 £10,109						
Year.	Receipts.	Recurrent Expenditure.	Profit.	Capital Expenditure during year.	Capital written off during year.	Nett Capital Expenditure at end of year.
1927	£22,960	*£13,109	9,851	£3,143	£4,867	£67,814
Profit in 1927—£9,851+Services to Government £1,000— Appropriate as follow: 7% Depreciation on £69,538 = £4,867 Interest on £69,538 @ 5% = £3,477 Pension Contribution = £ 500 Surplus £2,007 £10,851						

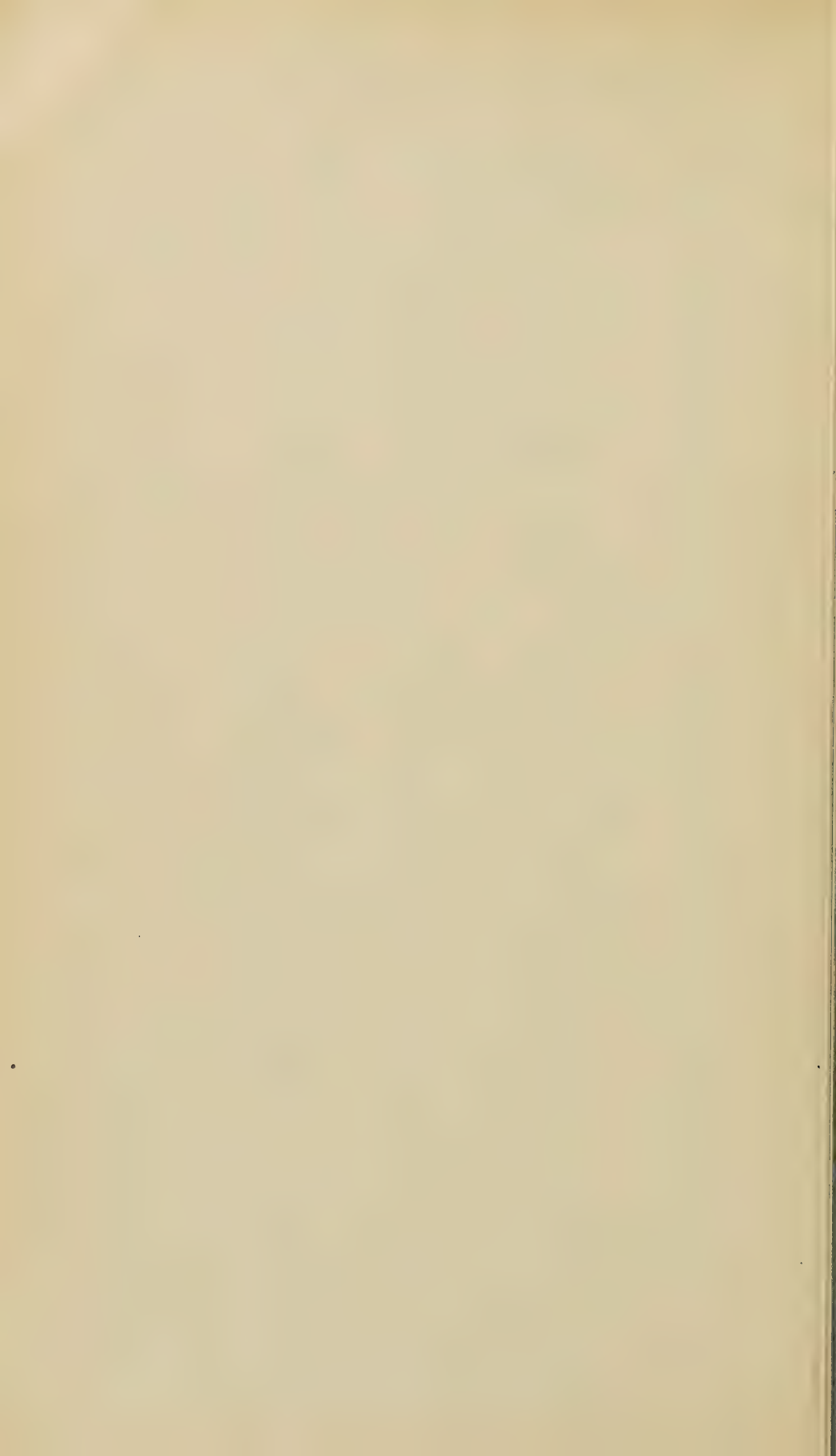
NOTE:—There may be a slight discrepancy between the above figures and the final balanced Treasury accounts, but the sheet may be taken as substantially correct.

*NOTE:—This increase is due to the revision of salaries and the new rate of conversion of the Rupee.

TABLE III.
Analysis of the Railway Working 1927.

Train Miles.	Total No. of Passengers.	No. of Passengers per Train Mile.	Passenger Receipts.	Freight (Approx. Tonnage).	Freight Receipts.	Total Receipts.	Receipts per Train Mile.	Total Expenditure.	Expenses per Train Mile.
1926	25,368	307,695	12.01	58,989 43	2200	4,548 26	Rs. cts. 63,537 69	Rs. cts. 71,326 50	Rs. cts. 2 33
1927	24,402	242,430	9.93	44,391 00	2202	5,367 00	Rs. cts. 49,758 00	Rs. cts. 64,151 00	Rs. cts. 2 66

NOTE:—In addition to the freight shown above, approximately 100,000 loads have been carried free as passengers' luggage.



Zanzibar Protectorate.

REPORT ON THE ZANZIBAR PRISONS FOR THE YEAR 1927.

1. *Prisons*.—The established prisons in the Protectorate during 1927 were as follows:—Central Prison, Mkokotoni and Chwaka, Zanzibar; Weti, Chake Chake and Mkoani, Pemba. The Mwera Jail is used for six days during the week by convicts detached from the Central Prison.

2. *Population*.—Committals to prison throughout the Protectorate during 1927, as compared with 1926, were as follows:—

	1926	1927
Convicted	957	1,051
On remand	602	660
Civil debtors	185	210

showing an increase of 94 in convicted prisoners, 58 in remand prisoners and 25 in civil debtors. The net increase being 177. The figures for each prison are shown in Appendix 1.

3. *Females*.—There was a large decrease in female prisoners in 1927 as compared with 1926. Below is a table of females sentenced to imprisonment since 1922, it is interesting to note that, although a decrease is shown on the figures for 1926, female crime has greatly increased since 1922.

	1922	1923	1924	1925	1926	1927
Females convicted	21	26	18	49	78	56

4. *Juveniles*.—Thirty juveniles of or under the age of 18 have been convicted during 1927, this is an increase of 17 on 1926, many of these committals have been for minor offences, serious crime amongst juveniles is quite small. The committals for the last six years is as under:—

1922	1923	1924	1925	1926	1927
3	13	8	9	13	30

5. *Recidivists*.—The total of previously convicted prisoners was much larger than in 1926, increasing from 48.06 per cent of the total to 61.56 per cent in 1927. The actual numbers were:—

	Once.	Twice.	Thrice or more.	Total Convicted.
1926	234	59	168	957
1927	409	83	155	1,051

6. *Escapes*.—Twelve prisoners escaped from custody during the year. Of these ten were from outside the prisons and two from inside. Nine were re-arrested. Figures as below:—

	Central Prison.	Weti.	Chake Chake.	Mkoani.
From outside	5	1	3	1
Re-arrested	3	1	3	1
From inside	2	—	—	—
Re-arrested	1	—	—	—

7. *Punishments*.—The total number of punishments awarded to prisoners for prison offences was much lower than in 1926. Punishments are shown in the following table:—

	1926	1927
Corporal punishment	63	57
Penal diet	68	28
Forfeiture of remission	6	1
Leg irons	—	1
Solitary confinement	15	5
Penal diet and solitary confinement	—	10

8. *Health*.—The health of the prisoners has been very good during the year. Ten deaths have occurred, eight at the Central Prison and two at Chake Chake, a decrease of two on the previous year. In the majority of cases death has been attributable to disease contracted before admission to prison. One convict was accidentally drowned at Zanzibar. The number of admissions to hospital show a slight increase on 1926, whilst the daily number on the sick list shows a large decrease:—

	1926	1927
Number of prisoners admitted to hospital	307	324
Average daily number on the sick list	9.48	6.24
Deaths	12	10
Released on the recommendation of the Director of Medical and Sanitary Services	7	2

The prevailing diseases were malaria, constipation, ulcers, bronchitis, ankylostomiasis and local injuries.

9. *Executions*.—No case of capital punishment during the year.

10. *Prisoners Dietary and Weight Records*.—The diet for natives has been increased during the year, fish is now issued daily instead of three times a week as heretofore, the issue of lemons, coconut and salt has also been increased, and a daily issue of two ounces of groundnuts made to Asiatic prisoners. The weighing records during the past year have shown a tendency for prisoners to increase in weight during confinement, this is apparent even with long-term prisoners.

11. *Industries*.—Trade industries, as follows, are practised at the Central Prison, viz., tailoring, carpentry, weaving, rope- and mat-making and tinning. The police and prisons in the Protectorate are

clothed by the tailoring industry at cost of materials alone, other Government Departments are supplied with rope, matting, etc., as required at cost price. Although a large saving is effected by this system, no revenue accrues to the Department. Rope, matting, woven cloth, etc., is sold to the public at 25 per cent on cost. Prisoners from the Central Prison are employed on menial duties at the Government Hospitals and at the Government Stables. A gang of prisoners are regularly employed at Ziwni Police Lines on conservancy work. In the district prisons, prisoners are usually employed in general clearing and cleaning, thus saving the employment of station hands. During the year a rifle range for the police force was constructed at Chake Chake by prison labour.

12. *Cost of Feeding Prisoners.*—The total expenditure on prisoners food during 1927 was less than in 1926. This was due to a better contract being secured. The expenditure on prisoners at the whole of the prisons is shown in Appendix 2. The daily average cost per prisoner was 20½ cents per day as compared with 22½ cents in 1926.

13. *Staff and Discipline.*—The European staff of the Department consists of the Governor of Prisons and the Superintendent of Prisons. The Asiatic and Native staff is as below:—

Clerk	1
Jemadar	—
Head Warders	2
Sergeant Warders	3
Warders (other grades)	49
Master Tailor	1
Master Carpenter	1
Master Weaver	—
Wardress	1
Cook	1

Mr. T. Cardozo, Clerk (Grade 2), was transferred from the Education Department to the Central Prison on September 20th, 1927.

Mr. T. M. Mehta, Clerk (Grade 3), proceeded to India on leave on September 5th, 1927, and he will be transferred from the Department on his return.

Mr. H. P. Jessa, Clerk (Grade 4), resigned on August 8th, 1927, and his post was abolished.

Jemadar Baijnath Nidhan proceeded to India on leave prior to being discharged as medically unfit on July 26th, 1927.

The Weaving Instructor was retrenched on December 31st, 1927.

Discipline amongst the warder staff was very fair, the following punishments were awarded:—

Reduction in grade	1
Severely reprimanded	1
Dismissed the service	3
Corporal punishment	4
Minor punishments	3

Ten other warders were discharged for the following reasons:—

Time expired	5
Medically unfit	1
Not likely to become efficient	4

The health of the staff has been very good.

14. *Distribution.*—The following table shows the distribution of the staff:—

	Governor.	Superintendent.	Clerks.	Jemadar.	Head Warders.	Other grades.	Wardress	Cook.	Carpenter.	Tailor.	Weaver.	
Central Prison ..	1	1	1	..	2	35	1	1	1	1	..	From Central Prison.
Mkokotoni ..						3						
Chwaka ..						1						
Mwera ..						1						
Weti (Pemba) ..						6						
Mkoani ..						2						
Chake Chake ..						5						

The Governor of Prisons visited the various prisons as under:—

Central Prison	87
Chwaka	5
Mwera	7
Weti	5
Mkoani	5
Mkokotoni	5

The Visiting Committee have also inspected regularly once each week.

15. *General.*—During the year the Rev. H. W. Weigall has visited the Central Prison twice a week and on every Sunday afternoon, when he has held a short service for the prisoners. On three occasions he was accompanied by the Bishop of Zanzibar. Miss Luce, of the U.M.C.A., has visited the female prisoners once a week for the past five months.

V. H. MURPHY,
Governor of Prisons.

Zanzibar, 3rd February, 1928.

APPENDIX 1.

The year opened with 256 prisoners in all prisons within the Protectorate distributed as below:—

	On Remand	Civil	Criminal male	Criminal female	Total
Central Prison	4	4	179	7	194
Chwaka	—	—	5	—	5
Mkokotoni	1	—	11	—	12
Weti (Pemba)	4	3	21	—	28
Chake Chake	1	4	10	—	15
Mkoani	—	—	2	—	2
Total	10	11	228	7	256

ADMISSIONS.

	On Remand	Civil	Criminal male	Criminal female	Total
Central Prison	379	61	549	25	1,014
Mkokotoni	31	—	63	—	94
Weti (Pemba)	117	106	213	11	447
Chake Chake	91	43	118	3	255
Mkoani	48	—	68	1	117
Total	666	210	1,011	40	1,927

DISTRIBUTION AT END OF YEAR.

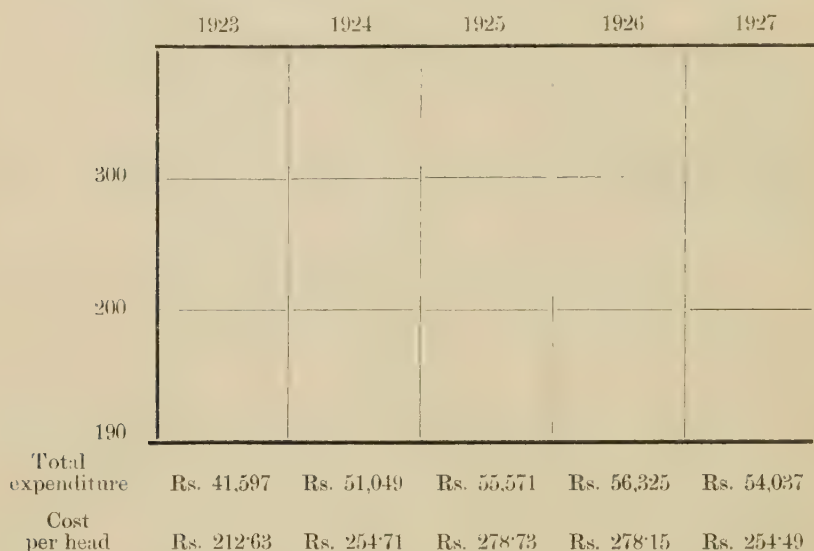
	On Remand	Civil	Criminal male	Criminal female	Total
Central Prison	6	7	135	6	154
Mkokotoni	—	—	5	—	5
Chwaka	—	—	4	—	4
Weti (Pemba)	—	15	18	—	33
Chake Chake	2	6	6	—	14
Mkoani	3	—	3	—	6
Total	11	28	171	6	216

SENTENCED.

	For one year or more but less than five years	For more than three months but less than one year	For 3 months or less	Total
Male	3	48	117	1,011
Female	—	—	2	38

APPENDIX 2.

Graph showing the daily average population in all prisons and the total expenditure of the Department during the past five years:—



Comparative statement of expenditure for years 1926 and 1927:—

	1926	1927	Increase. Decrease.	
	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.
Personal emoluments ...	29,967-77	33,200-03	3,232-26	...
Subsistence of prisoners	16,523-77	15,918-55	...	605-22
Upkeep of prisons ...	1,190-33	792-99	...	397-34
Prisoners' clothing ...	1,973-98	929-77	...	1,044-21
Clothing and equipment	1,204-71	1,158-30	...	46-41
Passages ...	1,710-76	1,390-25	...	320-51
Transport of prisoners...	79-72	52-51	...	27-21
Incidental expenses ...	92-00	43-83	...	48-17
Light ...	348-33	310-14	...	38-19
Tools and plant ...	2,052-38	53-14	...	1,999-24
Travelling expenses and transport	...	188-33	188-33	...
Workshop materials ...	195-19	...	...	195-19
Special expenditure ...	986-37	...	...	986-37
Total	56,325-31	54,037-84	3,420-59	4,526-50

Zanzibar Protectorate.

REPORT ON THE PORT AND MARINE DEPARTMENT

FOR THE YEAR 1927.

1. *General Shipping.*—For some years past the tonnage of ships visiting the Port of Zanzibar has been increasing, and the year 1927 shows an increase of 221,270 gross tons on the tonnage recorded in 1926. During 1927 the total number of ocean-going steamers was 353 with an aggregate gross tonnage of 2,344,571 tons. This increase is due to larger steamers being placed on the East African Service by the Union Castle Mail Steamship Co., Ltd., by the Messageries Maritimes and by the Compagnia Italiana Transatlantica; also to the visit of a second tourist steamer, there being only one of these in 1926. The two tourist steamers were the “Asturias”, 22,071 tons, on the 15th March, and the “Franconia”, 20,175 tons, on the 7th April. The “Asturias” is the largest merchant ship seen at Zanzibar. Coasting steamers number 258 with a total gross tonnage of 208,572 tons, an increase on the 1926 figures by 30 ships, or 102,364 tons. The placing of a German steamer on the coast accounts for a portion of the increase in tonnage. The movements of native vessels show a decline in both numbers and tonnage, 4,627 dhows cleared from the port as against 4,903 during the previous year.

2. *Warships.*—The German cruiser “Emden” visited Zanzibar from the 27th January to the 3rd February. H.M.S. “Effingham”, flying the flag of Vice-Admiral W. M. Ellerton, C.B., visited Zanzibar from 14th to 26th June. His Highness the Sultan lunched on board the Flagship and used his State Barge.

3. *Revenue.*—The total revenue collected by the department was Rs. 4,87,911. Departmental revenue has been increasing steadily year by year since 1920, and the figure for 1927 is the highest recorded.

4. *Expenditure.*—The total recurrent expenditure for the year was Rs. 3,65,209, about Rs. 20,000 higher than the 1926 recurrent expenditure figure. The increase is due to passages to Europe, maintenance of harbour craft previously provided from Pemba Administration votes, and to the running of the gas station, which was completed in February. Special expenditure amounted to Rs. 22,970, a decrease on the special expenditure incurred in 1926 by about 3½ lacs. The 1927 figure represents the cost of completing the gas station, the purchase of a motor-boat for Pemba service, a motor-boat engine for

Mkokotoni, the construction of a pontoon for landing cattle, and repairs to Malindi boat-shed.

5. *Port and Light Dues*.—These dues amounted to Rs. 1,76,947, a record figure, and Rs. 21,918 higher than the receipts for 1926. This source of revenue naturally fluctuates with the tonnage of shipping, although receipts were inflated during the latter part of the year by the collection of dues from native vessels, which are now required under the Ports Rules, 1927, to pay dues on their net registered tonnage.

6. *Marine Stores*.—A large amount of stores are carried for issue to the ships, repair shops and Pemba stations. The marine store-keeper also keeps coal and water accounts. During the year Government steamers consumed 2,068 tons of coal and 4,579 tons of water. Other departments consumed 2,364 tons of coal. Fresh water supplied to general shipping amounted to 40,258 tons.

7. *Small Craft*.—Under the Ports Rules, 1927, all tugs, lighters, cargo-boats, coolie-boats, fishing-boats and shore-boats used in the port are required to be licensed. Shore-boats had been surveyed at the beginning of the year, and were inspected weekly. As soon as possible after the introduction of the Ports Rules, the remainder of the craft enumerated were surveyed and issued with licences. Owing to the absence on leave of the Assistant Port Officer, the task of surveying fell to the Harbour Overseer.

8. *Clayton Disinfector*.—Routine fumigations were carried out on board the Government steamers. No steamers were quarantined, and therefore not required to be disinfected. A new vessel to replace the "Chuini" is on order, and is to be named the "Spurrier".

9. *Boat Repairs*.—Every working day of the year has seen the Malindi repair staff fully occupied. Government motor-boats and rowing-boats have been overhauled and repaired at regular intervals. Inspections have been made at Pemba ports, with the result that a number of craft were sent to Zanzibar for repairs.

10. *Fairway Buoys*.—The unlighted buoys in the Zanzibar approaches were changed in May. The lighted buoys were attended at routine times, and changed when necessary. Mkokotoni buoys were changed in May. Pemba buoys were changed in March. Some of the Pemba buoys are getting past service, but these are being replaced by buoys from Zanzibar, rendered available by the introduction of the A.G.A. lighted buoys. The lighted buoys have performed their functions without a hitch.

11. *Lighthouses*.—The lighthouse at Kigomacha was supplied with oil in March and August. The health of the staff has been good. Visits were made to each of the Zanzibar lighthouses at three-monthly intervals, when readings of gas consumption were taken. Gas cylinders were changed twice at each light. At all lights the consumption was normal, and the desired intensity was maintained.

Pungume Tower was scaled and painted in May. Whitewashing was carried out at other lighthouses during July.

12. *Gas Station*.—Fittings were completed in January, tests made and the station given a trial run. Mr. C. R. Steel, the representative of the Gas Accumulator Company of Brentford, who had supervised the erection and trials, left Zanzibar for England in the middle of February. It takes three or four days to charge a batch of cylinders, and the plant was run on eleven occasions during the year. Besides charging the cylinders for the Zanzibar lights, orders were executed for the Aden, Seychelles, Kenya and Tanganyika marine authorities.

13. *Government Steamers*.—One hundred and twenty-two voyages were made by the steamers, including weekly services between Zanzibar and Dar-es-Salaam. His Highness the Sultan hoisted his flag in "Khalifa" from 18th to 22nd September on the occasion of a State visit to Pemba. His Excellency the British Resident travelling in "Cupid" on the same occasion. His Excellency made three voyages of inspection in "Khalifa", two to Pemba and one to the north of Zanzibar Island. The "Khalifa" was used by Mr. Bottomley, of the Colonial Office, on his visit to the Protectorate. During the year 23,704 persons were carried to and from Pemba, and 17,038 between Zanzibar and Dar-es-Salaam; on the former service 89,742 packages were transported, and on the latter 9,553 packages. The total revenue from fares and freight, including services to Government, amounted to Rs. 2,68,593, while the expenditure figure was Rs. 2,51,964; both figures being slightly lower than those for 1926. As may be expected, the vagaries of the clove crop affect the earnings of the steamers, imports into Pemba fluctuating with the number of residents in the island, while corresponding variations in the returns of the Dar-es-Salaam service are also noticeable. No dry-docking took place in 1927, but on two occasions each ship was beached and cleaned at Zanzibar.

14. *Motor-boats*.—A large motor-boat, fitted with a Thornycroft engine, was purchased for towing service at Chake Chake, and has proved a valuable addition to the fleet.

15. *Lighters*.—The lighterage service in Pemba has proved its utility. Two more lighters, fitted with derricks, are on order.

16. *Ports Rules*.—On the 18th August "The Ports Rules, 1927", came into force. The new rules provide thorough surveillance of every type of small craft and native vessel. Their operation has thrown a great deal of work upon the staff of the department, but results have already justified this service.

17. *District Officers*.—In every Pemba port, at Mkokotoni and at Chwaka, the work of the department has been conducted in a most efficient manner by the officers and the members of the Administrative staff.

19. *Staff.*—The Port Officer was away on leave from the 17th January to the 10th August, and the Assistant Port Officer from the 29th August until the end of the year. In December the Port Officer attended a Conference of Port Authorities at Mombasa. I take this opportunity to record my appreciation of the loyal support rendered by every member of the department, both to my deputy and to myself.

C. J. CHARLEWOOD,

Port Officer.

PORT OFFICE,
Zanzibar, 6th March, 1928.

Zanzibar Protectorate.

REPORT ON THE EDUCATION DEPARTMENT FOR THE YEAR 1927.

I.—Establishment and Organisation.

1. *European Staff*.—Director, W. Hendry, M.A. (Edin.); Headmaster and Inspector of Schools, G. B. Johnson, Dip. Edn. (Cheltenham T. Coll.); Normal Master, L. W. Hollingsworth, B.A. (Lon.), Dip. Edn. (Lon.), F.R.HIST.S.; Superintendent of Industries, A. A. Duckett, M.A. (Cantab.).

2. *Asiatic Establishment*.—Teachers 7; Clerks 2; Carpentry Instructor 1; Metal-Work Instructor 1; Bootmaking Instructor 1.

3. *Arab Establishment*.—Teachers 24; Clerk 1; Tailoring Instructor 1.

4. *African Establishment*.—Teachers 20; Clerk 1; Carpentry Instructors 2.

5. *Egyptian Establishment*.—Teacher 1.

6. *Summary of Non-European Teaching Staff*.—(a) Teachers Training School 3; (b) Commercial School 1; (c) Central School (including elementary classes) 20; (d) District Elementary Schools 26; (e) Police School 1; (f) Jeanes Teacher 1; (g) Industrial Instructors 6.

II.—General.

1. *European Staff*.—The Director and the Superintendent of Industries were in the protectorate throughout the year. The Inspector of Schools returned from leave on the 19th of March. The Normal Master was on leave from 5th July to 26th December.

The Commercial Master was transferred to Kenya Colony on the 10th of March; and the Agricultural School Headmaster, after working throughout the year in the Agricultural Department, was permanently transferred to that department.

From the beginning of June Mrs. G. B. Johnson, wife of the Inspector of Schools, carried on the work of the new Arab Girls' School.

I have to thank my reduced staff for loyal help in 1927; and to tender the gratitude of the department to officers of other departments

who have kindly lent assistance, particularly to Mr. J. S. Last, Assistant District Commissioner, and to Messrs. G. Tomson and J. R. P. Soper, Agricultural Officers.

2. *Non-European Staff.*—The year was again characterised by harmonious working in the schools, despite much illness both in town and in the districts. The number of teachers remained the same as in the previous year, five of the 1926 staff being replaced by trained men from the Training School.

3. *Check to Expansion in 1927.*—The estimates for 1927 were cut down to a minimum owing to the prospect of reduced revenue. This accounts for the decrease in the European staff, the want of increase in the non-European staff, and the exiguity of the school-building programme. All these things are disappointing, but not disheartening, for the temporary check gave opportunity for the consolidation of ground already won and for preparation for future progress. Important features in the year's work are the improvement in the average standard of teaching occasioned by the substitution of trained men for untrained, the encouragement of individual work in the infant classes, the increase of the interest of the teachers in the practical work of the district schools, and last but not least the successful inauguration of female education.

4. *Future Policy.*—During the year, with the aid and advice of the Advisory Council of Education, there was elaborated in detail a scheme for the gradual extension of government education. The system of government schools suggested under this scheme was as follows:—

	Present Number.	Proposed Number.	
District Schools	12	30	
Central Schools	1	2	(One an agricultural boarding school).
Teachers' Training	1	1	(To be removed from town to country).
Commercial School	1	1	
Police School	1	1	
Girls' Schools	1	2	In town. [10 or more female teachers to be attached to district schools.]

It was suggested that three district schools should be started each year, and that the whole system should come into full operation by the year 1938; also that industrial apprenticeship should gradually be transferred to the technical departments.

The number of pupils in government schools and in aided schools was estimated as likely to rise to 5,510, and the recurrent expenditure of the system worked out at £45,260, with cost per pupil £8-4-0 per annum.

The Advisory Council has for some years pointed out that the adoption of a definite scheme of expansion would greatly facilitate the work of the department. Unfortunately, however, the government was unable to accept the scheme proposed; the only pronouncement which can at present be made is that it is intended to extend elementary education in the villages throughout the protectorate according as funds allow.

5. *Present Extent of Education in Zanzibar.*—The pupils on the rolls of schools on the last day of the year were as follows:—

Government Schools:—Boys 1,070, of whom 27 were in the Teachers' Training School, 16 in the Commercial School, 53 in the technical workshops, 356 in the town school, 618 in the district schools: girls 38.

Aided Private Schools:—Boys 770, of whom seven were apprentices at Chake Chake at the Friends Industrial Mission: girls 101.

Other Private Schools:—Boys 995: girls 804. In the mission schools under this head 549 of the pupils were adults.

Grand Total:—3,778, an increase of 371 over the 1926 figure.

6. *Government Examinations.*—(1) Primary Education Certificate Examination.—This examination is held for pupils of the fourth year of the primary section of the Central School, and takes place at the end of the school year. Seventeen pupils entered in February, 1927, and nine obtained certificates. Of the seventeen 15 were Indians, one an Arab and one a Comorian. The comparative dearth of Arab and African candidates is accounted for by the fact that six Arabs and four Africans were taken from the third year into the Teachers' Training School at the end of the school year 1925-6.

(2) Teachers' Certificate Examination:—Described in the previous report. At the examination held in February, 1927, five students sat and all gained certificates: first class, 1: second class, 3: third class, 1.

(3) Commercial School Diplomas and Certificates:—The nature of the examination was detailed in last year's report. At the end of the two-year course, which finished in February, 1927, 20 students were examined: diplomas were awarded to eight and certificates to eight. Nine of these students have entered government service.

At the end of the new one-year course of 1927-8, 16 pupils were examined: diplomas were awarded to three, and certificates to four.

(4) Clerical Examination:—No occasion arose for the holding of the Entrance Examination referred to in last year's report.

III.—Buildings.

At Kizimkazi, where the original native hut collapsed towards the end of 1926, a new type of building was erected. From a raised concrete floor measuring 72 ft. \times 17 ft. there rise, at intervals of 8 ft., thin pillars of reinforced concrete. At either end of the block class-rooms of 24 ft. \times 17 ft. are made by walling in the spaces between the pillars with corrugated iron: and a covered place of assembly is left in the centre. Between the top of the corrugated iron sheets and the roof come three feet of expanded metal. Ventilation is further provided for by leaving a space between wall and floor: and with the inside of the walls painted white, there is abundance of light. The roof is of corrugated asbestos, and the eaves are made broad to prevent the ingress of rain. This kind of building is cheap but lasting. A fully developed district school would consist of two such blocks, the middle portion of one being walled in if a fifth class-room is desired. The cost of building varies according to the location of the school; in round figures, including the cost of a lavatory and a rainwater tank, a complete school of two blocks such as described, erected in a remote locality should be built for less than £1,000. The school at Mwera (masonry walls with Marseilles tile roof), which provides two roomy class-rooms and a small verandah room as compared with the five class-rooms of a complete school of the new type, cost £1,050.

At Makunduchi, where all four class-rooms were in use from April, accommodation for tools was provided by the building of a small shed.

At Ng'ambo the work of teaching was facilitated by the demolition of the old court platform and the erection of a wooden partition between the class-rooms.

At Mkokotoni the school was transferred to the rest-house, where classes will be held until the requisite accommodation is available at the more central site of Mkwajuni.

Two teachers' houses were added to the previous total of 16, one at Weti and one at Chake Chake, the latter being allotted from the clerical staff buildings at Tibirizi.

For the Arab Girls' School it was necessary to find a building convenient to the homes of the prospective pupils. A section of the government-owned building formerly occupied by the Central School and now made use of by the Sir Euan Smith Madressa for overflow classes, was made into a suitable school by minor structural alterations and by taking into use the adjacent house which was formerly used as quarters for the school sergeant.

Towards the end of the year another room with its covered open-air verandah was made available by the Sir Euan Smith Madressa. The accommodation now secured allows for the development of the school into one of four classes. To provide the kitchen, which will later be necessary for culinary instruction, further minor structural alterations will be required on the ground floor. The premises, though not ideal, are satisfactory: they have the disadvantage of being in a noisy neighbourhood, but steps have been taken to abate this nuisance.

IV.—European Education.

As Mrs. Johnson's time is now taken up with her duties as Headmistress of the Arab Girls' School, there is no longer a private kindergarten class for European infants.

V.—Indian Education.

The number of Indian schools in town remains at twelve, the highest roll (477) being at the Sir Euan Smith Madressa.

The total number of Indian pupils, not including those of a school which has been started in Pemba at Chake Chake and is still in the experimental stage, has increased to 1,962, of whom 1,074 boys and 674 girls are at Indian schools, 73 boys and 83 girls at Mission schools, and 58 boys at government schools.

Grant-in-Aid Schools:—The work and management of the Sir Euan Smith Madressa again deserve high praise, despite the absence on leave for the major part of the year of the Headmaster, Mr. Tata. The average attendance shows the excellent percentage of 93.9. Examinations held under the supervision of this department revealed continued improvement in the standard of teaching. In January Mr. Bottomley of the Colonial Office found time to visit this school, and, like all other visitors, was impressed by the cleanliness and good order of the establishment.

The Aga Khan Boys' School was also satisfactory. The roll has slightly decreased, but the average attendance rose from 258 to 267. According to the terms agreed upon, the grant, which was started in 1925, will not be continued beyond five years, unless the school be housed under more modern and satisfactory conditions than those at present obtaining. During the year negotiations were carried on concerning a site for a new building. The matter is still under discussion but with every prospect of a successful issue.

The Hindoo Free Girls' School qualified for a grant-in-aid. Much good work is done in this school especially in needlework. Considerable improvements have been made as the result of inspections. The tone of the school is excellent. The school furniture, however, is unhygienic: it is hoped to persuade the managers to provide more suitable desks. Medical inspection will be commenced in 1928.

Others Schools:—Of these the most important is the Bohora community school, which has a roll of 160 boys and 117 girls. Recently an Indian graduate with some specialised training and many years' experience of practical teaching was appointed headmaster. The changes wrought by him are such that the managers have expressed the hope that the school will soon be able to qualify for a grant-in-aid.

VI.—Government Schools.

1. *Teachers' Training School.*—The report of the Normal Master is found in Appendix I. Some points call for further comment:—

(a) *Misfits:*—The case of a student being transferred to the Administrative Department is mentioned. This is our first misfit. Despite all care in the choice of pupils for training as teachers, other cases are sure to arise. There is always the chance of an exceptional case or two in which, through arrested mental development, disease or moral degradation, it will be impossible to divert the students concerned to other channels of useful citizenship; but I anticipate that, in the main, such misfits as do arise will be due to temperamental unsuitability. This is a trait which can be judged only by a master who has been in close personal touch with the pupil over a considerable period.

The case cited by the Normal Master is a very good example. This particular student was academically one of the best in his year: and in the Administrative Department he is giving such satisfaction that there is an urgent demand for youths of similar mental calibre.

As the Training School is the only establishment in which post-primary education is given under a European, and as the work of the school, both on its purely academic side and as a training in the management of classes of boys, is far from being an unsuitable training for administrative work, I have proposed that two or three extra pupils be taken annually on the roll of students in receipt of maintenance bursaries at this institution. These extra students would not in the original selection of candidates be chosen specifically for administrative work. The choice would be made by representatives of the two departments in consultation with the Normal Master towards the end of the second year of training. It is obvious that dissatisfaction might be caused through the duller boys being forced on one department or the other: but this is not likely to arise as the choice would naturally fall not on the duller boys but on those least fitted temperamentally for the teaching profession.

(b) *The Normal Magazine.*—This new venture has not only served to keep the ex-students in touch, but has aroused a more lively interest in country life and increased the desire of the students and teachers to be appointed to district schools.

(c) *Boarding.*—Lastly comes the very important question if and when it will be possible to convert the Training School into a boarding school in the country. The Normal Master has discussed the moral side and I entirely concur: the town is a bad setting for the training of our students, for they are at the age which is most exposed to the dangers and temptations of a very immoral town. Organised sports have done much to improve affairs: but day school conditions do not and cannot give the headmaster a fair chance. On the practical side, too, there is the consideration that to train students for the life of a country teacher the most fitting place is the country.

There is little hope, however, for some years of transferring this school to the Country. A training school must have classes for the students to practise in, and these classes must be close at hand: further, a boarding school has its own moral dangers and must be well and sufficiently staffed with reliable European and non-European masters. The expenses will be heavy and at present the protectorate cannot undertake them. In the scheme of expansion already referred to, I suggested that, when the agricultural primary school is built, additional accommodation should be provided for this school. With a district elementary school in close proximity we should have a most suitable set of schools for the purposes of training both in agriculture and in teaching.

2. *Commercial School.*—The post of Commercial Master was one of those recommended by the Education Commission of 1920. It was filled at the end of 1922 by the appointment of Captain Hodkin, under whom two courses each lasting two years were completed by February, 1927.

In a small organisation each European salary makes a large difference to the cost of education, and from 1924, when greater attention began to be paid to more rapid development of rural education, the feeling grew that the money spent on commercial education would more appropriately be devoted to country schools. Accordingly a transfer was sought for, and effected in March 1927. The good work done by Capt. Hodkin has been referred to in previous reports.

In the first course a young Arab master with some experience of teaching was seconded for commercial training, and in the second course he acted as assistant. The school is now carried on under this master. The fees are reduced and the length of the course decreased to one year. With the exception of Economics, the subjects remain as before. Diplomas and certificates are granted on the same basis, though their value is naturally not the same as formerly. Holders of these are now entitled, if entering government service, to rise to the fourth grade after one, instead of the usual two, years of learner-ship.

The 1927-8 class started with 20 pupils and finished with 16, average attendance being 17.9. All the pupils were Indians. The class is at present practically self-supporting. The good reputation of this school in sports was maintained.

3. *Central School.*—The elementary (first to fourth year of education) sections and the primary (fifth to eighth years) of the town school were again combined under the Indian headmaster for the sake of economy. The roll of the school on the last day of the year was 356, the average attendance for the year being 318.5.

The policy of sending as many as possible of the better teachers to the districts has a detrimental effect on the standard of teaching in this school. Progress and improvement will be difficult till more trained teachers can be spared.

The change to the Swahili medium for non-language subjects has been effected in the first three years of the primary school, except in the arithmetic of the third year. Some improvement has resulted from this change but it is not yet marked, as the teachers find it very difficult to adapt themselves to the new regime, especially in geography. Their own ability to use Swahili as a clear means of expressing thought leaves much room for improvement, except in the case of the one trained teacher, whose experience of debating and other work in Swahili in the Teachers' Training School has made him an excellent exponent of his subjects in the vernacular. In the first year of the Primary School, English was taught with the aid of the New Method Readers: the results were most satisfactory, and the series will be introduced in the second year in 1928.

In the elementary school, with its Arab and African classes, the infant work is excellent: the subsequent years suffer from the very unequal abilities of the residue of teachers left over from the district and the primary schools. The Arab side has 124 pupils. Owing to the fact that Arab parents have now for four years been persuaded without compulsory measures to send their boys at an early age, the decrease in average age as compared with five years ago is remarkable, and is a very healthy sign for the future of the Arab community. On the African side the first two classes are well filled, while the upper two, in spite of a supplementary supply of pupils from the suburban school of Ng'ambo, are sparsely attended. Compulsion has been applied in the African classes for two years. The total of African elementary town pupils is 102.

The Schools Sports Club made a very creditable show in the league matches and other competitions held under the auspices of the Supervisor of Sports: while in the inter-schools shield competitions the usual keenness was enhanced by the inclusion of the Indian grant-in-aid and other schools.

The inter-class competition in physical drill was again keenly contested, a feature being the excellent drill of the first-year primary class, which just missed appearing in the final. In the actual final more difficult exercises were demanded and were admirably carried out by both teams. The programme included one game or go-as-you-please item, and it was pleasing to see the clever adaptation of a native game which was adopted by the winners, the team from the Technical Workshops. I have to thank Capt. The O.Morchoe for judging this competition and for the great interest which he showed.

4. *District Schools.*—The roll of pupils in attendance at district schools on 31st December, 1927 was 618 as compared with 562 in 1926. The reason for the very low figure of increase has already been given (Section II). The beginning of the school year found the twelve district schools in various stages of development, some having had one, some two, and some three classes in the previous year. It was necessary to decide in each case with due regard to the best interests of the district whether to keep on the same pupils and dispense with

a new infants class, or to take in infants and dismiss the top class. At only one school, Makunduchi, was it possible to add a class and bring the school to its full development of four years.

Through various agencies, such as talks with the teachers during visits of inspection, and especially through the teachers' own articles in the Normal Magazine, there has arisen among the staff a greatly increased interest in country life and the part which the schools are to play in that life. The magazine enables the teachers to keep in touch with what is being done at schools other than their own, and a spirit of competition is beginning to show itself.

In the twelve schools there were 27 classes, seven infant, eleven first-year, eight second-year and one third-year.

The abilities of the teachers are very unequal. Of the ten trained teachers from the first two completed courses of the Training School, seven were in district schools in 1927: among the untrained I should class two as being of outstanding ability in district work, three as of medium ability, eleven as satisfactory and four as below that standard.

Academic Side:—The infant methods inaugurated in 1926 were continued and a new feature was added in the use of the individual cards described elsewhere in this report (Appendix VI).

Reading:—There has been considerable improvement in expression and enunciation.

Writing:—The results of writing tests show that the script writing of the first year elementary class falls far below the standard attained in the infant stage. This is disappointing, for neatness of writing is the best initial training for neat craftsmanship. During the year exercise-books with various kinds of special rulings have been procured, and it is hoped to give the teachers material assistance in their efforts to maintain a high standard throughout the four years.

Arithmetic:—The results were very satisfactory all round. In the first year elementary class, the teachers have been greatly assisted by the booklet of examples and instructions composed by the Inspector of Schools for this class in 1924-5. Suitable text-books for the other classes would be a great boon.

Hygiene:—The doctor in charge of research work made many visits to the country schools and is very pleased with the progress of the pupils in knowledge of the nature and causes of various local diseases. The practical application of this knowledge to the combating of these diseases is not yet, and will not be, satisfactory until regular campaigns and house-to-house cleaning visits can be organised with tact and full knowledge of the adult village character by supervisors whose time will be devoted to the district schools alone.

Geography:—In the elementary teaching of this subject a better grasp is being shown by the teachers, especially in the drawing of plans.

Kuran and Islam:—The syllabus was revised and it was decided to maintain instruction in Arabic writing.

On the academic side the schools most worthy of commendation are Kisimkazi, Ng'ambo and Chake Chake.

Two of the district schools differ from the others in having no manual work in the curriculum. These are Ng'ambo and Mwera. The former has the same syllabus as the African side of the Town Central School, to which it acts as a feeder.

At Mwera the syllabus is practically the same as that of the Arab side of the Central School. Almost from the inception of this school the attendance has been unsatisfactory. Parents are unwilling to send their boys early, as they do not, or will not, trust the government school to give sufficient instruction in the Kuran: most of the parents are poor and, as soon as the boys are of a suitable age, they are taken away to become drivers of bullock carts. By increasing the number of hours devoted to Arabic studies, by sending Arab teachers acceptable to the people of the district, by visiting and talking with the parents and by endeavouring to enlist the support of the Arab community in town, efforts have been made to induce the parents to send their boys to the school. The result, an attendance of 40 pupils instead of double that number, is so disappointing that, unless the further measures which have been taken to persuade parents prove successful, it would be advisable to close down this school at the end of the school-year 1928-9 and use the building for other purposes.

Practical Side:—In my report on the year 1926 I stated that it was intended to employ Mr. Soper for some part of 1927 as a supervisor of district schools. His task would have been to study the conditions of the villages in which he worked, to encourage and advise the teachers especially in the matter of their garden work, and to link up the work of the boys with the interests of the villages. Unfortunately the decision to postpone the building of the Agricultural Primary School resulted in the transfer of this officer to the Agricultural Department. The development of the district school work, therefore, has again mainly depended on the efforts of the head teachers.

Garden-work, palm-leaf basket-making and thatch-making have been the staple forms of manual work during the year. At several schools the fencing round the plots has been greatly improved, and in this work the Kisimkazi school deserves special mention. Despite the stony and unfavourable nature of the soil, large new plots have been brought into cultivation, and all have been fenced in. In addition a new flower plot in front of the school has been surrounded with a wonderfully neat fence, which in five sections exhibits models of five different styles. The making of fishing lines has been carried on at this school and also at Mangapwani, where the services of a local expert were secured for a short period to teach line-making and the construction of fish-traps to the older pupils. At Makunduchi and Kisimkazi small pole and palm-leaf structures were erected by the pupils to provide shelter from the sun.

The Ndiyani school has the best soil and its garden continues to improve under the care of an elderly teacher who is possessed of considerable skill. He deserves great credit for the orderly lay-out of his garden. At this school a demonstration was kindly given by agricultural officers of the method of planting clove seedlings, and the lessons learnt were circulated to all other schools through the medium of the Normal Magazine. The pupils were quick to grasp the salient points and to put them into execution.

The powers of observation of the Ndiyani pupils are remarkable, and testify strongly to the extreme value of a good garden well managed. When a boy is keenly observant, however, it does not follow that he can give lucid expression to the facts and truths he has observed. The development of this power of expression forms an all-important link between the practical and the academic sides, and the teachers are being led to recognise this, and to make the pupils' practical work the subject of verbal discussions and of simple essays.

Till late in 1927 practically all crops and flowers were produced from seeds procured locally by the teachers and pupils. Towards the end of the year a consignment of seeds was obtained from South Africa. There has not been time to see whether the distribution of these seeds has resulted in improvements, nor is there sufficient supervision to provide adequate advice on methods of sowing and tending. It is indeed questionable whether it is wise to import seeds until constant supervision is possible.

Till then no great improvement of crops and methods can be expected: for the present, progress is being made at the few schools where there are teachers with a flair for garden-work, while in all schools useful work is being done in the inculcation of habits of industry and pride of achievement. When the longed-for supervisors do eventuate, they will find a rich field to work in. Men of considerable ability and versatility are required: for such as may develop real enthusiasm, I can imagine no more entrancing and interesting a career than that of carrying into execution plans for the general progress and uplift of the villagers of Zanzibar.

In two schools, as previously mentioned, no manual work is done: two others are in villages which are towny in character, and it is never to be expected that they can become the centres of village improvement, which the schools of smaller villages can be. Of the remaining eight, two may already be said to have established themselves as a telling force in the village. This special progress is entirely due to the personalities of the head teachers. In the establishing of relations between the school and the village life, the individuality of the head-teacher is paramount in importance. Initiative and sustained energy, experience and tact in dealings with parents, ingratiation without ostentation in the social side of village life, commonsense in dealing with the problems which arise—these are a few of the many points required in a head teacher if he is to succeed in making his school a power for good and an integral part of village life and progress. Such

qualities may be summed up as the capacity for leadership, and, bearing in mind their mature character, it is not surprising to find first that we have not many men with the necessary ability and strength of character, and second that the few we have are teachers of a good many years' experience. Younger teachers must have experience of men and affairs before they can become a real force. Yet it is among the younger trained teachers that we must find our future leaders, and it is pleasing to note that there are several who show great promise. When these have acquired the necessary experience, I am confident that they will play a very effective part in the development of village life.

5. *Industrial Schools*.—The agricultural and other pursuits carried on at the elementary district schools have already been treated. It is hoped that it may be possible to add other trades: and during the year the Superintendent of Industries visited various schools with a view to estimating the advisability of adopting small programmes of instruction in building. A small sum has been voted for 1928 for instruction in village crafts, and part of this may be used to carry out instruction in stone work under a local man at one of the schools in the extreme south of the island. At Mangapwani the Superintendent has been given charge of building an extension to the existing school, and in this work both town apprentices and the village boys will take part.

At Chake Chake the carpentry workshop was carried on under Mr. White of the Friends' Industrial Mission: during part of the year the apprentices had useful experience in building work on the construction of a new workshop.

The report of the Superintendent of Industries on the town courses of apprenticeship will be found in Appendix II, and details of the numbers and nationalities of the apprentices in the Statistical Appendix. In the two more skilled trades, carpentry and metal-work, we are faced with the prospect of the ex-apprentices finding more and more difficulty in obtaining work. This is due to the contraction of the labour market, and to Asiatic "trades-unionism" both in and out of the technical departments. To give the African a sure foothold in the skilled and semi-skilled labour market in competition with the Asiatic is the work of several generations. The original scheme adopted in Zanzibar some 18 years ago was to have a Central Government Workshop, where, under sympathetic supervision, the ex-apprentice would pass through an "improver" stage. It was hoped that contracts would be entrusted to this shop, and doubtless that in time it would be taken over by the technical departments, when there had grown up in it Africans capable of reliable overseeing. This shop had perforce to be given up during the war, and the spate of work during the war and post-war inflation made apprentices rush to outside work as soon as they had finished their ordinary training. The latter fact made it impossible to get the right ex-apprentices to recommence the shop for improvers: its place promised to be taken by European supervision in the technical departments, in which there was a large

increase of staff. This promise, however, has not been realised: in the open labour market the African is at the mercy of the more experienced Asiatic, and in the present contraction of demand for labour is being crushed out. A revision of the present system is therefore necessary, and it is hoped that the need for present economy will not unduly influence the government in its decision as to future policy with regard to African apprenticeship in the more skilled trades.

VII.—Inspection and Supervision.

The need for increased staff for this essential service has been stressed both in this and previous reports. It is expected that a supervisor will be appointed in 1928, and will undergo a preliminary training in England. One more supervisor is necessary to complete the minimum number recommended in the 1926 report for the efficient running of this branch.

With both Director and Inspector of Schools present in the protectorate for the major part of the year, it was possible to carry out more inspection than in 1926.

The Jeanes teacher worked steadily throughout the year, both in the district schools and in the town. He was especially useful in introducing newer methods at Muyuni, where a school built by the villagers and taught by an old-time teacher was assisted by a grant-in-aid.

VIII.—Agricultural Education.

As there is no officer in the department with any specialised knowledge of agriculture, I have little to add under this head to what has been chronicled under the heading of District Schools, and in the report of the Normal Master concerning the agricultural expedition organised by one of his assistant masters.

The idea of erecting copra-drying kilns in connection with the district schools has not materialised partly owing to financial stringency and partly to doubts which have arisen as to the commercial value of this mode of drying.

IX.—Education of Girls.

Report by the Headmistress of the Arab Girls' School are found in Appendix III.

It was fully expected that the initial distrust that invariably attends any such new venture in Zanzibar would take a considerable time to overcome: but, thanks to the reputation already established by the Headmistress in the voluntary work conducted in the Arab boys infant class in 1926, to preliminary discussions of the intended curriculum with representatives of the Arab community, and to good recruiting work by the Arab staff, the stage of suspicion lasted but a week or two.

Towards the end of the year Their Highnesses' the Sultan and Sultana were graciously pleased to visit the school and to present prizes. Their Highnesses expressed themselves as deeply impressed and highly pleased with the progress of the school.

In the higher classes as they develop, domestic economy and welfare-work will play an important part: the progress of the school and its effect on home-life will be watched with great interest. It is hoped that parents will be induced to allow their girls to stay at school for the full course in preference to arranging marriages for them at an all too early age.

In addition to the excellent work done with the ordinary pupils, Mrs. Johnson is rendering very valuable and necessary service in training teachers. The original staff of two assistants have acquired much greater proficiency, and at the end of the year three additional pupil-teachers were in training.

The demand for an African girls' school in town is already insistent, and it is hoped that premises will be found and that funds will be made available to start one as soon as a sufficient number of trained local women-teachers are ready. An African contributor to the Normal Magazine very appositely pointed out that the benefit of educating African girls would be felt not only in the African but also in the Arab household. "Many evils", he wrote, "are due to ignorant nurses. What is the use of educating the Arab female only, when all their household staff are Africans?"

X.—Police School.

The Arab put in charge of this school, though not a trained teacher, has done very satisfactory work and is well reported on by the officers of the Police Department. It has not been possible to give him much assistance beyond a few days help from the Jeanes teacher.

A large number of men pass through his hands, and most are very keen on the school work. Hours are perforce somewhat irregular owing to the changes in the times of beat duty.

Nineteen of the askaris qualified during the year for extra allowance as literates or semi-literates.

Special instruction was given to the bandboys.

XI.—Evening Schools.

The three classes conducted in the town school for Africans were continued throughout the year, and were well attended. The number in attendance in December was 74.

Accommodation was also provided in the school for a fourth class taught by a teacher privately paid.

XII.—Mission Schools.

The number of pupils attending mission schools has increased from 745 to 922. Of this total 549 are adults chiefly of mainland extraction.

In the children's schools the pupils on roll were as follows:—

	Boys' Schools	Roll	Girls' Schools	Roll
Universities Mission	1	65	2	63
Friends' Industrial Mission	1	22	1	7
Society of the Holy Ghost	3	96	3	113

The rolls of adult pupils are 212, 36 and 301 in the respective missions, the largest increase being in the Universities Mission.

The Rev. Canon Broomfield has again kindly contributed a report on the schools of this mission (Appendix V).

One more boy from the High School of the Universities Mission was admitted to the government educational workshops.

XIII.—Hygiene and Medical Inspection.

The pupils of the following schools now undergo routine medical inspection—The Government Central School, the Government Elementary School at Ng'ambo, the Aga Khan Boys' School, the Sir Euan Smith Madressa, the Government Industrial School.

The equipment of the eye-testing room arrived and has been installed.

Statistics of the routine inspection and of the daily cases treated are given in the report of the Medical Department.

The medical officer in charge of this work has many other duties in connection with the Department of Public Health, and consequently much of the inspection and treatment, has perforce to be left to a sub-assistant surgeon. In view of the vital importance of this work it is to be hoped that it will be possible in the near future to increase the number of medical officers and to place all the work in the hands of a European.

XIV.—Languages.

Arabic.—In the Arab classes of the town school and at Mwera District School this language is taught from the infant stage onwards. Not being the tongue used in the homes of the pupils it is, as far as school work goes, a foreign language, and the commencement of its study at this early stage is educationally unsound. I am convinced that the Arab boys would make as much progress in the language of their forefathers if its study were started three or four years later, an arrangement which in the town school would allow of the concentration of the best available Arab teaching on a smaller number of classes and would make for greater efficiency of instruction. As yet, however, Arab public opinion shows little sign of being won over to this view. It is very jealous of, and every averse from any change in the old arrangement, whereby at least a third of the total hours is given to study of Arabic and the Kuran. The Muslim parent has the duty of

ensuring that his boys study the Kuran, and he naturally thinks that the study of the Arabic language is a great aid to the former study. The Arabic of the Kuran, however, is so different from that of the ordinary language that the study of the latter is not a great assistance to the former. All that is required for the younger pupils at this stage is the teaching of the alphabet and practice in writing. Given these, study of the language could be postponed to a more suitable age with detriment neither to the study of the Kuran nor to proficiency in Arabic.

As to the stage of proficiency to which the pupils can be brought within the limited sphere of our primary classes, some misconception has existed among Arab parents. Boys leaving the Central School have a fairly competent knowledge of the structure of the language, but only those who live in families which have associations with Arabs from Arabia, attain anything like fluency in the use of the spoken language. Only they have the opportunity of putting into practical use the Arabic they learn at school. The remainder never use it and on leaving school soon forget what they have learned and never advance to the stage where they can read and appreciate Arabic literature. To some extent the study of Arabic is continued in the mosques, but considering the situation as a whole one is forced to conclude that with the increased use of English among the more educated Arabs, Arabic tends to fall into greater disuse than formerly. From the point of view of the future of the young Arab as a useful member of the community the schools cannot devote more time to Arabic than they are now doing. It would appear to be the part of the Arabs themselves to help the efforts of the schools towards the preservation of the language. Good work could be done by the inauguration of a regular series of lectures designed to excite and maintain the interest of the young Arab in Arab language and literature: but it is essential that this should be done by the Arabs themselves, for such an earnest of the reality and seriousness of their desire would be the best means of spreading that desire among the ranks of the younger Arabs, and of enlisting the sympathy and co-operation on Non-Arabs who would be willing to assist. The sympathy of the government has already been shown in the aid given to the Arab Library, which was re-organised with the help of this department and re-opened in 1927. The library supplies an excellent opportunity for the continuance of Arabic studies.

Swahili.—The use of this language as medium in non-language subjects has been referred to under the heading "Central School".

In Appendix VI the Inspector of Schools gives a description of Swahili books and notes in use in our schools.

Particulars of English text-books are being prepared for the new Text-Book Sub-Committee of the Advisory Committee on Education in British Tropical Africa.

W. HENDRY,
Director of Education.

Zanzibar, 21st March, 1928.

APPENDIX I.

Report by Mr. L. W. Hollingsworth on the Teachers' Training School.

During my absence on leave from the 3rd July until 26th December, the usual work was carried on very ably by Mr. C. M. Patel and Sh. A. A. Seif, assisted by one of my former students, Mr. Muhammad Taki.

Five students completed their course of training in February and were awarded the following certificates:—

First Class Certificate	... 1
Second Class Certificate	... 3
Third Class Certificate	... 1

When the school re-opened on the 11th April, 12 new free pupils were admitted, thus bringing the total number of students to 28. One of the entrants was a Bohora Indian who was required to sign an agreement with his community that he would teach in the Bohora School on the completion of his training. Of the remaining 11 students, only two came from the Fourth Primary, and nine from the Third Primary. This is the second year that specially selected pupils of the Third Primary have been admitted, and I must again record that the policy has been fully justified by the results.

In May, one of the third-year students was transferred to the Senior Commissioner's Department, as he proved to be temperamentally unsuited for the teaching profession. His work has been reported on very favourably by the administrative officer under whom he has been placed.

In my report for 1926 I described, in considerable detail, the arrangements whereby students are given a certain amount of professional training from the beginning of the course. The same plan has been followed this year with excellent results. The students, especially after reaching their third year, show a keen interest in the practical aspects of their training. They are most anxious to learn about methods and principles of teaching and display a healthy rivalry in the giving of criticism lessons. In the discussion which always follows such lessons, many students have shown by the pertinency of their comments and criticisms that they have begun to grasp the fundamental principles of sound teaching methods. In my own lectures on the theory and practice of teaching I have especially emphasized not only the gulf which lies between real education for good living and mere routine instruction, but also the necessity, in Africa, for the adaptation of all educational work to the needs of the village community.

Additional opportunity for the exchange of opinion on educational topics has been provided by the custom of holding a weekly debate. The following list will indicate the type of subject debated: Compulsory games; corporal punishment; country life as opposed to town life; the desirability of teaching African pupils English; the state of

the clove industry. These debates have proved most helpful both in developing powers of self-expression and confidence, and also in revealing some of the thoughts, prejudices and aspirations of my students. After the voting on the motion, I have usually reserved a few minutes in which to pass comments on the more important ideas brought to light during the previous discussion. This has given me an ideal opportunity for removing misconceptions, as well as for enabling me to drive home some important point much more forcibly than during the ordinary course of class-room instruction.

In April I commenced the publication of a monthly magazine called "The Normal Magazine", the aim of which was to keep all my ex-students in touch with their old school, and to provide them with a platform for the discussion of education and allied topics. Both past and present members of the Training School were invited to contribute articles and letters either in English or Swahili, while, in addition, a study scheme was published whereby ex-students could, if they desired, continue their education. By means of a monthly editorial letter I have been able to discuss various problems and difficulties which have arisen from time to time, and also to give, in a friendly, chatty fashion, a modicum of advice and encouragement. The Director of Education and the Inspector of Schools have also found the columns of the magazine useful for the publication of information and advice.

From its inception, the magazine has been an undoubted success. Both past and present students have responded generously to my call for contributions, while the correspondence arising from articles written in criticism of certain District Schools, has been, at times, so keen that the editor has been obliged to wield the blue pencil rigorously. Such lively correspondence, however, must be taken as a healthy sign, especially when one remembers the apathy which has been so common among our teachers in the past. Some of the articles written by district school teachers have aroused considerable interest in village work, so that quite a number of students who formerly desired to stop in the town are now anxious to obtain posts in the country schools. Mr. C. M. Patel has throughout the year given me valuable assistance in the production of the magazine, and during my absence on leave carried on some of the editorial work. I continued to write my monthly letter while I was in England and found this an excellent way of keeping in touch with the school.

Sh. A. A. Seif, my Arab assistant, has shown commendable zeal and ability in his nature study lessons. Being a local shamba-owner⁽¹⁾ who has always taken a keen interest in the improvement of his own plantation, he has been able to illustrate his lessons with a wealth of apposite examples based on local conditions. His keenness has strongly infected his pupils and many of these town boys who used to show a distinct aversion to garden and agricultural work are now becoming enthusiastic to learn all they can about these subjects. Towards the end of the year he arranged, in conjunction with several

(1) plantation.

officers of the Agricultural Department, a three days' visit to several of the chief government plantations, where the students were shown the best methods of planting and rearing cloves and coconuts, and were given a series of talks and demonstrations. This proved such a success that it has been decided to make such agricultural excursions an integral part of the training course.

Whereas in the past it has been found necessary to amalgamate for sports with the Commercial School, this year, owing to a considerable increase in numbers, it has been possible to form a separate Normal Sports Club. Four practice days a week were arranged for cricket and football, and a number of the younger and less athletic students, who had always been too shy and nervous to participate in team games, were induced to attend these practices. In the Government Schools Competition we won the Cricket Shield and got into the final for the Football Shield. The students are made to realize that an important qualification for an African teacher is the ability to organize school sports, and the majority of them on leaving are capable of training a village school football team.

Among educationists there is a widespread conviction that the most potent factor in normal education is the personality of the teacher. The ideal school-master should not only be of the highest character, but should feel a definite sense of vocation. The lives of many men who have been fortunate enough to come under the influence of such a personality are an eloquent testimony to the powerful effect wrought upon character by a man inspired with these lofty ideals. It is obvious, therefore, that in an institution designed to produce efficient teachers, the development of character should take primary importance. Yet, in Zanzibar, the work of training teachers is seriously handicapped by the fact that the training school is a day-school attended mainly by town boys, who have often contracted evil habits in their childhood. When it is remembered that the town of Zanzibar is notorious for its immorality, and that the majority of the students have lived in this pernicious atmosphere for sixteen or seventeen years before starting their comparatively short three years' course, the almost insuperable difficulties involved in moral training will be realized. The good influence of the school is only too often entirely checked by bad outside forces. I feel most strongly that it is greatly to be regretted that, owing to the financial position of the Protectorate, the Government has been unable to provide a Boarding School in the country for the training of teachers.

TEACHERS' TRAINING SCHOOL STATISTICS.*

Class started in 1925.

Race.	No. of Students.	Remarks.
Arab	3	Free (signed Government agreement).
Persian	2	" " " "
		(1 transferred to Administration)
Indian	1	Free (signed Government agreement).

Class started in 1926.

Race.	No. of Students.	Remarks.
Arab	6	Free (signed Government agreement).
Mhadimu	2	" " " "
Swahili	1	" " " "
Comoro	1	" " " "

Class started in 1927.

Race.	No. of Students.	Remarks.
Arab	6	Free (signed Government agreement).
Comoro	2	" " " "
Swahili	1	" " " "
Indian	3	" (2 signed Government agreement and one a community agreement).

APPENDIX II.

Report on the Industrial Workshops by Mr. A. A. Ducket.

Work, conduct and attendance have improved very much, although the attendance fell slightly during the latter part of the year owing to the sickness of the Drill Instructor, whose duty it was to investigate cases of reported sickness and to find absentees.

The improvement of the conduct of apprentices outside school hours can only be dealt with satisfactorily when a boarding-house is provided.

The hours of work have been increased to six hours and 50 minutes daily. This, and increased application on the part of apprentices, has enormously increased the output of the shops. The present average apprentice takes one week over a job which in 1925 took four or more, and he produces a better-finished article.

The standard of arithmetic among new entrants is still far below what is required.

(1) *Carpentry*:—This section has shown most marked improvement over last year, the output being several times greater. The better boys among the second-year apprentices show more promise than any previous batch.

The theoretical instruction is gradually improving. Daily instruction is given in arithmetic, elementary estimating and drawing, each boy having approximately five hours a week theoretical work. Owing to the very low standard of arithmetic, the class in estimating was given up for a time in 1926-7, but it was found possible to resume it in 1927-8.

The position of ex-apprentices remains much the same. Various groups have started shops, but most of them have dissolved owing to their composition, which usually consists of one good craftsman and several incompetents.

One boy was dismissed for bad conduct, and one was invalided out on account of bad health.

(2) *Tailoring*:—This class became quite popular, there being more applicants, generally speaking not boys from the Central School, than there were vacancies. Those boys who have acquired the best knowledge of arithmetic are making quite good progress in cutting by direct measures, but, as was to be expected, the residue are making very poor headway.

Naturally, bad trade conditions have affected the earnings of ex-apprentices to a certain extent, but most of them continue to make a good living.

(3) *Bootmaking*:—Except in the case of very dull boys, it has been decided to allow apprentices to leave after three years. Two apprentices will, therefore, finish early in 1928, and their progress will give some indication as to the prospects for boys in this trade.

The trade seems to be very much looked down on for some reason, and fresh entrants are hard to obtain. On the other hand, if a boy has any stamina he should be able to do well on his own, provided he has a boot-sewing machine, as the standard of workmanship here is not high.

(4) *Mechanics*.—This class was started only about thirty months ago. It continues to make good progress.

Two ex-apprentice carpenters on short agreements left to take up work as lorry drivers.

The agreement of one apprentice was cancelled by mutual consent.

APPENDIX III.

Report by the Headmistress, Mrs. G. R. Johnson, on the Arab Girls' School.

1. ON THE WORK OF THE FIRST TERM, JUNE TO AUGUST, 1927.

1. *Preparation, Enrolment, Ages and Attendance*.—During the month of May preparations were made to open the Arab Girls' School, and parents were invited to enrol children between the ages of five and eight years.

Twenty was fixed as the maximum number of admissions and ten as the minimum required to warrant the opening of the school.

Nineteen children were enrolled, and for this first year the age limit was extended to twelve years in order to admit as many children as possible belonging to any one family.

The school opened on June 1st but only sixteen children actually presented themselves. At the end of a fortnight, however, applications came in from all sides, with the result that the maximum of

twenty had to be ruled out and by mid July the roll totalled thirty-six children. Many others have since applied, but the number could not be exceeded.

The attendance has been excellent. In August the school was open 18 days and there were 624 attendances out of a possible 648. i.e., 96.3 per cent.

2. *Curriculum.*—(a) *Reading and Writing.*—The children began with reading and writing of Swahili and Arabic, following the method introduced into the boys' school last year. At the present moment (end of August) fifteen letters have been learnt with their equivalents in Arabic, and the children read fluently, and write from dictation. any words made up of those letters, e.g.:—

YULE MTU AMEPATA FENESI.

KOMBA ANAKULA PAPAI LEO.

Script writing in large hand is used, as errors in formation are thus more easily corrected than with the smaller type.

(b) *Arithmetic.*—The visualisation of number has been insisted upon and to that end, beads, kindergarten needles, coloured paper and crayons have been utilised.

(c) *Needle-Work.*—The progress in needle-work has been quite equal to that which one would expect from English children. Kindergarten canvas has been used, and the foundation has been laid for running, hemming and oversewing stitches.

(b) *Progress in Tidiness.*—Each child was given a wall-pocket been obtained, and the children are pushing forward in the hope of making the clothes for it as a preparation for lessons in mothercraft which are being arranged for next year. This enthusiasm about the needlework is a great thing in a country where the only sewing attempted is done by men folk.

(c) *Religion.*—Two lessons a week are given in religion and three in the reading and reciting of the Kuran. School normally starts at nine, but religious teaching begins at eight-thirty. This has been a most effective means of ensuring punctuality.

3. *Comments.*—(a) *Home Life.*—The greatest difficulty with the children lies in the fact that even the poorest are accustomed to being waited upon by ayahs or "boys", and such children have no knowledge of doing anything for themselves or of taking care of their possessions.

(b) *Progress in Tidiness.*—Each child was given a wall pocket in which to keep three exercise books, pencil, ruler, pricker, pricking mat, needle-work, scissors and thimble. At the end of three months these pockets are at last being carefully and tidily kept. Nothing is done for the child that she can do for herself.

(c) *Individual Work*.—The introduction of the Johnson Reading Cards on the lines of the Chelsea Individual Series has enabled us to introduce a certain amount of individual work.

(d) *Hygiene and Drill*.—As the points arise, talks in hygiene are given, but at present no fixed time is allotted to this subject, as it is felt that the children will understand more easily a talk that arises out of an incident in the school life. Informal drill is taken between lessons.

(e) *Conservation of Customs*.—Special stress is laid upon the upholding of Arab traditions, and pride of race is extolled. The child who still wears her native dress is admired and commended. The courtesies of Arab salutations are adopted, and the children are encouraged to play their own native singing games.

(f) *Character of Pupils*.—The children are lovable, enthusiastic and most eager to work. There is no slacking and there is a great respect for discipline. With this there is nevertheless a free and easy atmosphere which makes the school a happy place.

(g) *The Future of the School*.—Looking ahead, troubles in the future will arise from the inadequacy of teachers and from their ignorance. With this in mind, much time and attention are being paid to the elder girls of the school in the hope that they will become candidates for training in two years time.

(h) *Teachers in Training*.—At the present we have one Arab woman, a former Kuran teacher who has no knowledge of the principles of teaching, and two young women of South African extraction who are more enlightened.

There are two young Arab girls also under training. All these people have to be taught and set their exercises as if they were school children.

The two girls of South African origin are of the most use and render great assistance in preparing the books and needle-work: but the onus of the actual teaching rests entirely on the European Head-mistress.

(i) *Equipment of School*.—Small tables and chairs are being used instead of desks, as in the kindergarten schools at home. Those and some of the apparatus for the kindergarten work were made in the school workshops of the Education Department.

(j) *Open Days*.—On Thursday, 25th August, an open day was held to which all mothers were invited by means of letters written by the children.

Sixteen mothers responded, others sending letters of excuse on the plea of sickness or absence from the town. The school carried

on in the usual manner and the mothers were free to wander round asking the children questions and looking at the work.

The general attitude was one of amazement that the children could do things of which they themselves knew nothing. They were especially pleased with the needle-work and the writing (both Swahili and Arabic). They were shown the welfare doll and the material intended for the making of its clothes of which they approved highly.

The school was then assembled in the hall and the children recited passages from the Kuran. More advanced children were chosen to read from the Kuran. The parents expressed themselves delighted with all they saw.

It is hoped that these open days will be a means whereby the teachers will learn more of the home life and needs of the Arab girls. Even on this first open day most helpful suggestions were given as to the clothing required for the welfare doll.

The effect on the children was quite marked. They seem to have realised that their work was something of which they could be really proud, and they have since entered into it with even greater zest than before.

2. On Subsequent Work to the Close of the Year.

At the close of 1927 the Arab Girl's School had been in existence just seven months, and the hopes entertained at its inception have been realised and the fears dispelled.

Two more girls were admitted, the total roll being 38. There has been no falling off in enthusiasm. The children have grown more and more eager, and the attendance has suffered only through a slight outbreak of chicken-pox and influenza when the girls were easily persuaded to attend hospital.

All can now read Swahili—some quite fluently. Writing has progressed in a most satisfactory manner. In Arabic and Kuran the children have made marked progress, and it has been asserted that they have learnt more Kuran and Arabic than they would have done in a Kuran school, where nothing but these two subjects are attempted. The arithmetic has not been forced and lessons have merely taken the form of practical number (with apparatus), and shopping sums involving pice and annas. It is in the needle-work that the most astonishing progress has been made. Not only have the bigger girls, aged eight to twelve, mastered all the stitches of plain sewing but they fix all their own work. The standard of the work is high and the garments made are useful. Many have already completed the outfit for a new-born baby.

The children are clean, lovable and eager; and are very jealous of the good name of the school.

APPENDIX IV.

Cost of Education in Zanzibar.

(Part of an article contributed to the "Official Gazette" in 1927
by the Director of Education.

The table given hereunder shows the annual cost to government per head of pupils on the roll of government and government-aided schools for the years 1915 to 1925. The figures are calculated on the actual annual expenditure after deducting special expenditure.

TABLE.

Year.	Govt.	Govt. Aided.	Total	Actual Expenditure		Expenditure		
				excluding		per Head.		
				Special Expenditure.				
				£		£	s.	d.
1915	395	Nil	395	2,645		6	13	11
1916	388	Nil	388	2,881		7	8	6
1917	454	119	573	2,969		5	3	7
1918	459	123	582	3,514		6	0	9
1919	493	177	670	3,367		5	0	6
1920	560	243	803	3,901		4	17	2
1921	556	285	841	4,464		5	6	2
1922	510	316	826	5,859		7	1	10
1923	617	242	859	7,372		8	11	8
1924	697	416	1,113	8,858		7	19	2
1925	783	775	1,558	11,489		7	7	6

To attempt close comparison with other countries is futile: no argument can be based on a comparison of these figures with those of another country without due enquiry into the calculations and into details affecting the systems in both countries.

The following remarks will be of use to those who wish to study the costs more closely:—

(1) The figures given above embrace expenditure on pupils in elementary (used synonymously with primary in this article) schools, technical schools, commercial and teacher training classes, evening classes and police classes.

(2) They include under the heading "pupils", only pupils on the rolls of government and government-aided schools, excluding evening and police classes.

(3) The figures represent "cost to government". As regards the expenditure on pupils of aided schools, only the government grants, not the total expenses of these schools are reckoned.

(4) Up to 1922, however, the figures showing cost per head to government may be taken as a fair index of the actual cost per head of elementary education. In 1917 the figure is affected by the inclusion of 119 pupils of the Sir Euan Smith Madressa which received a government grant for the first time in the year.

The large increase of pupils in 1925 is due in part to the Boys' School of the Ismaili Khoja Community becoming a grant-in-aid school, while the development of government education in the districts is apparent from 1923 onwards.

The years 1920 to 1925 show sharp rises in expenditure, due chiefly to increases in the European staff, but concurrent large increases in the number of pupils give the cost per head a downward tendency in the last three years.

From 1923 the high cost per head of the following small schools, Teaching Training, Commercial and Industrial, each with Europeans in charge, and the extension of evening classes makes the figures obtained unreliable as an index of the cost per head of elementary education.

For 1926 I have worked out figures firstly on the same basis as above. The expenditure was £14,961 for 1,690 pupils or £8-17-0 per head.

Secondly, I have worked out a figure which more accurately represents the cost per head of elementary education. In my calculation there is included teachers' training as being intimately connected with elementary education, and also the full expenditure, both government and private, of the aided schools, items excluded are commercial and industrial training, evening classes and police classes, and the training tour of the headmaster for the proposed agricultural primary school. The figures thus obtained are: Expenditure £12,654 for 1,614 pupils, making the cost per head of elementary education £7-16-10.

APPENDIX V.

Report by the Rev. Canon G. W. Broomfield on the U.M.C.A. Schools.

St. Paul's High School, Kiungani.

The Principal was away on furlough for five months, and the school was in the charge of Canon Palmer and Mr. E. A. Gill. Everything was carried on as usual. At the beginning of the year the African teaching staff was strengthened by the advent of Mw. Augustino Ramadhani, late of the staff of the Teachers' Training College, Minaki. The majority of the boys made good progress during the year, and examination results were satisfactory. The two top classes can now be taught almost entirely in English. The total number of boys was sixty-six; all of whom were boarders. Fifty per cent of the boys are of fifteen or more years of age.

Mkunazini Night School.

The numbers attending this school decreased slightly, but the average attendance was about fifty at the end of the year. The grading of pupils and the arrangement of classes are matters of considerable difficulty in an adult school of this character, but many of the students made good progress, and the school justified its existence. It continued to be self-supporting in the matter of the payment of the African staff and the buying of school materials.

The Out-Schools at Mahonda, Machui and Dunga.

Those who attend these schools are mainly adults from the mainland, the education given is of an elementary character. A new teacher was sent to Mahonda in place of Mw. William Swede, who has gone to Dar-es-Salaam.

Girls' Schools at Mbweni, Mkunazini and Weti (Pemba).

These schools have continued as usual, although the Mbweni and Mkunazini Schools were handicapped by the furloughs of Miss Bridges Lee and Miss Greene.

APPENDIX VI.

Report on Text-Books in the Swahili Language by Mr. G. B. Johnson.

Our schools are still heavily handicapped by a shortage of suitable African vernacular readers and text-books in geography, history, arithmetic and science, written by teachers who have had practical experience of African schools and who are familiar with the mentality of the African. We also need a really suitable series of language books written for the teaching of English to the African.

It will be seen from the following notes that the European officers of this department are alive to what is needed. Owing, however, to the restricted circulation of school books in the Protectorate, the cost of publications specially written for Zanzibar is prohibitive. African books used here must be acceptable on the mainland also, they must therefore be written in the modified Swahili required by the Tanganyika Territory Publications Committee.

The Standardisation Committee which met at Dar-es-Salaam in 1925 formulated spelling rules which are generally acceptable, although it will be a long time before they are in popular use. The choice of a common vocabulary is, however, quite another matter. The present lack of uniformity is a real obstacle to literary progress. Pending the publication of an authoritative dictionary approved by the general consensus of expert opinion in Africa and at home, no real literary advance seems possible. As things stand everything is liable to change. The choice of words is always open to discussion and to decisions which may be reversed by authority later on.

Swahili is mainly a spoken language, and its words are ever changing. A study of Madan's dictionary and of the vocabularies in Steere's handbook shows how very far modern Zanzibar Swahili has been modified during the past forty years. The Zanzibar dialect has spread all over East African undergoing further changes varying locally according to tribes. It has been estimated that over 150 mainland tribes comprising from 17 to 20 million people use Swahili in one form or another. The problem of standardising its vocabularies in a commonly acceptable dictionary is therefore a formidable one. The Standardisation Committee rightly recommended that the Zanzibar dialect should be the basis of standardisation. The mainland variations of the Zanzibar dialect are, however, spoken by an overwhelming majority, and it follows that a generally acceptable dictionary will have to include a large proportion of words disguised under foreign forms together with a considerable number of words not in use in the Protectorate. It seems to follow pretty obviously that Zanzibar will eventually have forced upon her a school literature written in a more or less contaminated form of her own mother-tongue. This is for the Protectorate a regrettable—if inevitable—consequence and a heavy price to pay for the standardisation of Swahili. There is indeed a quite definite feeling of resentment against the introduction of mainland forms, which are often regarded as debased forms of the language by people who pride themselves on speaking the pure tongue. Perhaps geographical, religious and historical factors accentuate this attitude. After all Zanzibar and Pemba are islands with a Muhammadan population and a strong Arab tradition. Their peoples are as insular as island peoples usually are. The enforcement of standardised Swahili in our schools will be a difficult and unpleasant process, and it will be a long time before continental uses are popular.

The following readers and text-books are in use in the Zanzibar Government Schools:—

Readers:— (i) *Mafundisho ya Masomo na Hati* (Mr. and Mrs. G. B. Johnson).—This little book contains a series of lessons designed to teach Swahili reading and writing to infants on modern phonetic lines which are briefly described in Section VI of the Annual Report for 1926. So far, it has not been printed, but all teachers of infant classes are supplied with a Roneo copy. The method of teaching outlined seems very definitely to have taken root. The teachers have adopted it with commendable enthusiasm as well as with remarkable aptitude and success, while the children themselves are keen co-operators on an active basis. It has transformed the drudgery of learning to read and write into a pleasurable occupation in which the interest of the child never flags.

(ii) *The Johnson Series Reading Cards*. These are designed for use in infant classes in conjunction with the *Mafundisho ya Masomo na Hati*. A supply barely sufficient for one year's use was printed at the Government Press during 1927. The set contains 39 cards of progressive difficulty, so arranged as to include all the sounds of

Swahili in the order in which they are presented in the *Mafundisho*. The cards have been carefully prepared so that on no card does a sound appear which has not already been learnt. Simple stories are introduced as early as possible and from this point each card contains a short questionnaire on the story printed on the previous card. These questionnaires serve as the basis of oral (and later written) exercises. The cards are kept available in such a way that the individual child can go and get the next one of the series as soon as it has finished the previous one and has been tested in it by the teacher. In this way each child can get along at its own individual rate independently of the slower or quicker children of the class.

(iii) *Masomo ya Kwanza* (Parts 1-3).—These little Mission readers are published by the S.P.C.K. and were formerly used in our infants and elementary classes. They are still stocked in district schools, but, as readers, have been superseded by the Johnson Card Series, which more than covers the ground traversed by the *Masomo* and at the same time presents the subject-matter on such different lines that the *Masomo ya Kwanza* readers are really of no practical use to our teachers.

(iv) *Hadithi za Esopo* (*Æsop's Fables*).—This little book of 71 pages is at present the next step forward in order of difficulty. A few of the quickest children in the infants classes find time to read it in whole or part in the third term. It is allocated for use in the first elementary Standard (the second year at school). It does not, however, contain sufficient reading matter to occupy the whole year.

A new edition in suitable type was published by the Sheldon Press in 1926—unfortunately without any illustrations.

(v) *Habari za Walimwengu, Part I* (Rev. G. W. Broomfield, U.M.C.A.).—This is the first of a series of elementary geographical readers based on the lines of the Human Geography Series (Fairgrieve and Young). Part I (133 pages) was published by Macmillans in 1926. The book is printed in bold type, and contains a number of well-illustrated stories of people of other lands written for small children. It is at present allocated to the first elementary class, but the early pages are rather difficult for children who have had only one year at school, and they really require preliminary explanations by the teacher.

It is hoped that Part II will soon appear, and will prove suitable for use in the second elementary classes.

(vi) *Hekaya za Abunawas na Hadithi Nyingine* (Tales of Abunawas and Other Stories).—The present revised edition (181 pages) was issued by Macmillans in 1927. The type is good and the subject matter is suitable for the third-year elementary classes and above. As in the case of *Hadithi za Esopo* there are no illustrations.

Geography.—The department has no Swahili text-books in use in this subject.

History.—At present the only Swahili text-book in use is *Milango ya History, Part I* (L. W. Hollingsworth), published by Macmillans in 1926. Part II will shortly appear. *Milango ya History* aims at giving a brief outline of world history from the earliest times told in such a way that the books may interest the senior children as readers, and at the same time may provide the teachers with all the necessary materials for the preparation of a course of lessons. History and geography are correlated and excellent illustrations are provided.

Part I carries the world story as far as the conquests and death of Alexander the Great.

Hygiene.—(i) *Afya* (Health).—This book was compiled by Mr. Rivers-Smith and published by Macmillans in 1925. It deals simply with the elementary principles governing health, housing and food in East Africa, and is suitably illustrated.

(ii) *Homa* (Fever).—This is an illustrated anti-mosquito pamphlet designed for general distribution, showing the life-history of the mosquito, and explaining how to prevent breeding and infection. This pamphlet was prepared in 1924 by Mr. W. Hendry in collaboration with Dr. W. Mansfield-Aders, the Economic Biologist.

Citizenship.—*Uraia*.—Written by Mr. Rivers-Smith and Mr. F. Johnson, and published in 1927. The book, which contains copious local illustrations, endeavours to trace the material benefits brought to the natives by the civilising influences of European—and particularly British—administration, and further to show that good citizenship means loyal support for all measures taken by government to improve social and economic conditions.

The book contains no reference to spiritual or ethical influences in the evolution of a good citizen.

The strong local colouring which runs throughout the book may be considered by some people to diminish its value as a school text-book outside Tanganyika Territory.

Arithmetic.—(i) *Maelezo ya Hesabu za Darasa ya Infants* (Mr. G. B. Johnson).—This is a detailed explanation written to show teachers the way to introduce notation to infant classes, where children do not deal with numbers greater than 99. The simple operations of addition, subtraction (without carrying), and multiplication are taught through easy concrete examples. Notation is taught and sums are worked throughout with the aid of concrete objects (matches, stones, sticks, etc.).

It was intended that Mrs. G. B. Johnson should write a complementary book containing a course of exercises sufficient for the year, but owing to the impossibility of publication this book has not appeared. The annual task of re-typing and Roneo-ing books of this sort is so heavy that it seems impossible to increase the numbers already in circulation.

(ii) *Kitabu cha Hesabu za Darasa ya Kwanza* (G. B. Johnson).—

This is an arithmetic book for the first-year elementary class (second year of education) and is the only Swahili arithmetic book in general use in Zanzibar schools. It contains a course of work which covers the first year syllabus: it includes full explanations for the teachers and also 700 sums arranged progressively to cover three terms. The majority of the recognised weights and measures in use in Zanzibar are not common to the mainland. Hence we need a special series of arithmetic books of our own. It is obvious that the practical value of teaching the first four rules to our children is in the main lost unless we teach them to apply these rules to the weights and measures in everyday use in the bazaars. The little book now under reference was intended to be the first of a series designed to meet our local needs, but owing to the prohibitive cost of publication we have had to be content with Roneo copies of this first number, and nothing has so far been done towards continuing the series.

The teaching of arithmetic in our district schools is terribly handicapped by the lack of the necessary text-books. The compilation of graduated exercises to cover a year's work is beyond the ingenuity of our class teachers, and there is at present simply no other book to offer them.

Religion.—*Aya Zilizochaguliwa katika Kuraani* and *Risalat al Jamya*.—Both these little books were written in Arabic by the late Sheikh Ahmed bin Smeit, as the result of a meeting of the four Kathis of Zanzibar. The former contains selected passages from the Kuran, and the application of these passages to life is shown: in the pages of the latter the principles and religious duties of Islam are detailed. A large stock of these books, printed by the Government Printer, is in existence, and supplies can be sent to other territories. The Arabic is printed on one side and the Swahili explanations on the other. Of the former book the print is rather small for use in classes of small boys: in the latter which is more suitable for younger boys the type is bold and easily read.

APPENDIX VII.

Statistics.

TABLE I.

PRIMARY EDUCATION CERTIFICATE EXAMINATION, 1927.

	No. of Candidates.	Passed.	Failed.
Arabs	1	—	1
African	1	—	1
Indians	15	9	6
Total	17	9	8

SUBSEQUENT CAREERS OF ABOVE.

	Teachers' Training School.	Commercial School.	Government Clerical Service.	Private Business or Commercial Clerks.	Others Unemployed.
PASSES.					
Indians	2	6 ⁽¹⁾	—	1	—
FAILURES.					
Arabs	—	—	—	—	1 ⁽³⁾
Africans	—	—	—	—	1 ⁽³⁾
Indians	1	4 ⁽²⁾	—	1	—

(¹) Of these one went into private business after two terms of the Commercial Class.

(²) Of these one went into private business after two terms of the Commercial Class.

(³) Returned to Central School.

TABLE II.

Industrial Apprentices—Numbers and Nationalities (as on December, 31st).

Trade.	Total No. of Apprentices.	Arab.	Swahili.	Comoro.	Persian.	Somali.	Baluch.
ZANZIBAR.							
Carpentry	22	3	11	5	—	2	1
Tailoring	13	3	6	3	1	—	—
Bootmaking	9	1	8	—	—	—	—
Metal Work	9	5	3	—	1	—	—
PEMBA.							
Carpentry	7	2	5	—	—	—	—

TABLE III

DISTRIBUTION OF GOVERNMENT SCHOOLS.

	Number of Schools.		Monthly Average on Roll.				Monthly Average Attendance.		Remarks.
	1925	1926	1927	1925	1926	1927	1925	1926	1927
ZANZIBAR ISLAND.									
T. T. School (Zanzibar town)	1	1	1	17.0	21.0	26.1	16.2	20.2	24.7
Commercial School (Zanzibar town)	1	1	1	17.0	20.0	18.7	15.7	18.8	17.9
Central School (Zanzibar town)	1	1	1	31.2	32.7	36.4	28.8	29.4	31.5
Industrial School (Zanzibar town)	1	1	1	46.0	45.3	50.4	32.8	39.6	44.7
Ng'umbo Elementary School	1	1	1	49.7	41.7	50.6	40.2	37.7	41.8
Mkokotoni Elementary School	1	1	1	31.4	49.5	46.0	24.9	41.9	38.3
Mangapwani Elementary School	1	1	1	31.6	42.0	50.6	28.5	38.6	46.2
Mwera Elementary School	1	1	1	35.5	51.0	60.4	31.1	40.3	46.8
Ndijani Elementary School	1	1	1	29.5	44.7	61.0	25.8	39.7	51.7
Makunduchi Elementary School	1	1	1	54.6	75.8	89.1	49.8	69.8	84.8
Kizimkazi Elementary School	1	1	1	39.9	46.9	70.7	37.2	44.8	65.1
Muyuni Elementary School	—	—	1	—	—	31.0	—	—	28.3
PEMBA ISLAND.									
Chake Chake Elementary School	1	1	1	53.5	58.0	63.2	35.2	47.9	53.9
Weti Elementary School	1	1	1	34.8	39.2	47.0	26.0	34.0	39.1
Matangatwani Elementary School	1	1	1	23.0	25.6	23.4	17.0	19.9	18.1
Kengeja	—	1	1	—	29.5	29.0	—	27.4	26.0

TABLE IV.

COMPARATIVE TABLE OF EXPENDITURE.

Year.	Total Expenditure. ⁽¹⁾	Total Revenue.	Percentage of Revenue Spent on Education.
	£	£	% "
1920	3,901	330,212	1.18
1921	4,464	455,773	0.98
1922	5,968	426,418	1.40
1923	7,372	589,224	1.25
1924	9,168	492,527	1.86
1925	12,041	578,023	2.08
1926	15,836	449,037	3.53
1927 ⁽²⁾	18,788	544,083	3.45
1928 ⁽³⁾	20,596	482,732	4.27

Notes.—⁽¹⁾ Exclusive of capital expenditure on school buildings, houses, workshops, etc.

⁽²⁾ According to Revised Estimates.

⁽³⁾ According to Estimates.

TABLE V.

RELATION OF SCHOOL ATTENDANCE TO POPULATION AND TO
CHILDREN OF SCHOOL AGE.

Total Native Population, Census 1924	...	...	202,665
Native Children (both sexes)	...	...	48,086
Estimated number of native children of school age	...	...	24,000
Number of children of school age in attendance at Government Schools	...	...	1,108
Number of native children of school age in attendance at Government Schools (Including Arabs)...	...	...	1,050
Percentage of native children of school age in attendance at Government Schools	...	...	4.37%
Number of pupils attending Mission Schools			
(a) Native children (including 100 girls)	217		
(b) Goan and Parsee children	156		
(c) Adults, Native (including 48 women)	549		
Total	—		922
Percentage of native children of school age in attendance at Mission Schools	...	...	0.90%
Number of Indian children attending Indian Schools			
Boys	...	1,074	
Girls	...	674	
Total	—		1,748
Total of Indian children attending Schools	...	...	1,962
Total Indian population based on 1921 Census...	...	...	13,767

Zanzibar Protectorate.

REPORT ON THE BRITISH AND ZANZIBAR COURTS.

FOR THE YEAR 1927.

1. *General.*—The statistics which form the second part of this report show that during the past year there has been a general increase in civil cases and in the revenue derived therefrom, while on the other hand there has been a very considerable and equally general decrease in the number of criminal cases. The total number of cases, both civil and criminal, dealt with in all Courts has increased from 14,095 in 1926 to 14,305, and the revenue, which in civil cases has increased by nearly Rs. 20,000, shows a general increase over the revenue for 1926 of about Rs. 6,500.

Economic conditions may possibly account for the considerable increase which has taken place in the number of insolvencies. No doubt the fall in values, both of cloves and of shambas, has made it more difficult for persons engaged both in commerce and agriculture to meet their liabilities. Of 100 persons adjudicated insolvent, 43 are described as Arabs, 38 as Indians, 17 as Swahilis and one each Baluchi and European, and with only one exception the adjudication was made in each case on the petition of the debtor himself. Few, however, of these insolvencies were of any special importance and in many cases the debtor had no realizable assets.

The only legislation during the year directly affecting the Courts was a minor amendment of the Civil Procedure Decree. Rules of Court relating to suits by Poor Persons and dealing with other subjects have been made from time to time.

The report of the Resident Magistrate is appended in which the decrease of the criminal cases is explained. The number of persons sentenced to imprisonment for one year or over is 43 as against 53 in 1926.

I also append the report of the Registrar of Patents, Designs and Trade Marks.

2. *Statistics.*—The following statements show the number of cases and the revenue collected in the High Court and Subordinate Courts. A comparison with former years is included:—

A. HIGH COURT.

	1927.		1926.		1925.	
	No.	Fees. Rs.	No.	Fees. Rs.	No.	Fees. Rs.
CIVIL.—						
Original Suits, Zanzibar ..	264	47,057	256	40,090	199	38,958
Original Suits, Pemba ..	20	3,745	24	2,705	18	1,453
Appeals from Subordinate Courts ..	31	967	26	450	34	929
Insolvency Cases ..	100	10,158	76	7,525	70	7,436
Grant of Probate or Letters of Administration, Zanzibar ..	129	3,182	192	3,666	146	3,994
Grant of Probate or Letters of Administration, Pemba ..	74	1,500	95	1,494	105	1,795
Patents, Designs and Trade Marks ..	..	1,220	..	2,161	..	3,200
Miscellaneous ..	..	1,664	..	1,473	..	1,541
	..	69,493	..	59,474	..	59,306
CRIMINAL.—						
Sessions Cases ..	23	186	22	205	12	271
Appeals from Subordinate Courts ..	11		9		11	
Revisions ..	6		15		12	
Confirmations ..	37		26		58	
	..	69,679	..	59,679	..	59,577

Of the Probate cases, 124 were grants of Letters of Administration with or without a will annexed to the Administrator-General.

CIVIL APPEALS TO THE HIGH COURT FROM THE LOWER COURTS.

Dismissed or withdrawn.	Allowed in whole or part.	Pending or remitted for trial.	Total.
11	6	14	31

CRIMINAL APPEALS TO THE HIGH COURT FROM THE LOWER COURTS.

Dismissed or withdrawn.	Retrial ordered or otherwise varied.	Allowed.	Pending.	Total.
2	3	6	...	11

CRIMINAL REVISION CASES BY THE HIGH COURT.

Sentence maintained.	Retrial ordered or otherwise varied.	Reversed.	Pending	Total.
...	2	4	...	6

CONFIRMATION CASES.

Confirmed without alteration.	Reduced.	Pending.	Acquittal ordered.	Total.
30	4	2	1	37

B. SUBORDINATE COURTS.

CIVIL.

		Kathis' Courts.	Other Courts.	Total.	Fees. Rs.
Zanzibar	...	759	4,496	5,255	42,767
Mkokotoni	...	224	421	645	3,783
Chwaka	...	241	127	368	1,768
Total, Zanzibar	...	1,224	5,044	6,268	48,318
PEMBA.					
Chake Chake	...	687	1,063	1,750	12,903
Weti	...	849	1,311	2,160	16,077
Mkoani	...	598	1,043	1,641	14,569
Total, Pemba	...	2,134	3,417	5,551	43,549
Grand Total	...	3,358	8,461	11,819	91,867

CRIMINAL.

No. of Cases.		Fees and Fines.	
	Total.	Rs.	Total.
Zanzibar	1,572	9,916	
Mkokotoni	103	451	
Chwaka	35	223	
	1,710		10,590
Pemba.			
Chake Chake	215	1,405	
Weti	384	1,925	
Mkoani	177	1,053	
	776		4,383
Total 2,486		Total Rs. 14,973	

The total number of cases, civil and criminal, heard in the Subordinate Courts was 14,305 as against 14,095 in 1926.

COMPARATIVE TABLES.

I. CIVIL SUITS.

	1927		1926		1925		1924	
	Kathis' Courts.	Other Courts.	Kathis' Courts.	Other Courts.	Kathis' Courts.	Other Courts.	Kathis' Courts.	Other Courts.
Zanzibar	759	4,496	661	4,385	778	3,781	988	2,984
Mkokotoni	224	421	274	631	241	458	220	148
Chwaka	241	127	285	129	153	67	173	27
Chake-Chake	687	1,063	565	810	519	757	363	751
Weti	849	1,311	454	1,254	455	856	449	689
Mkoani	598	1,043	699	929	827	1,118	740	490
	3,358	8,461	2,238	8,138	2,973	7,036	2,933	5,089
	11,819		11,076		10,009		8,022	

II. CRIMINAL CASES.

	1927		1926		1925		1924	
	No. of Cases.	No. of persons.	No. of Cases.	No. of persons.	No. of Cases.	No. of persons.	No. of Cases.	No. of persons.
Zanzibar ...	1,572	2,204	2,333	3,441	1,966	2,642	1,683	2,126
Mkokotoni ...	103	136	142	182	94	128	93	115
Chwaka ...	35	42	57	59	65	73	24	24
Total, Zanzibar ...	1,710	2,382	2,532	3,682	2,125	2,843	1,800	2,265
Chake Chake ...	215	271	156	218	326	423	270	304
Weti ...	384	464	200	263	224	288	355	458
Mkoani ...	177	247	131	170	168	207	115	134
Total, Pemba ...	776	982	487	651	718	918	740	896
Grand Total ...	2,486	3,364	3,019	4,333	2,843	3,761	2,540	3,161

Further Criminal Statistics will be found in the Blue Book.

III. REVENUE.

The total revenue is made up as follows:—

	Rs.
High Court (Civil) ...	69,493
High Court (Criminal) ...	186
Subordinate Courts (Civil) ...	91,867
Subordinate Courts (Criminal) ...	14,973

Total Rs. 176,519

Comparative figures of this and three previous years are:—

	1927	1926	1925	1924
	Rs.	Rs.	Rs.	Rs.
Civil	161,360	141,556	138,130	125,917
Criminal	15,159	28,392	26,196	20,820
Total Rs.	176,519	169,948	164,326	146,737

T. S. TOMLINSON,
Chief Justice.

Zanzibar, 24th January, 1928.

REPORT ON THE RESIDENT MAGISTRATE'S COURT (CRIMINAL SIDE) AT ZANZIBAR FOR THE YEAR 1927.

During the year under review 2,204 persons were charged in the Resident Magistrate's Court for Zanzibar, of whom 1,709 were convicted, 19 committed to Sessions, and 476 acquitted or discharged.

The total number of actual cases tried or enquired into was 1,572 as against 2,333 in 1926.

I append the comparative figures of cases brought during the last five years:—

1927	1926	1925	1924	1923
1,572	2,333	1,966	1,683	1,386

The total revenue derived from fees and fines, amounted to Rs. 9,916-21 cts. as against Rs. 23,917-66 cts. in 1926, showing a decrease of Rs. 14,001-45 cts., which is, of course, accounted for by the diminution of cases and absence of serious charges.

I append the comparative figures of revenue derived during the past five years:—

1927	1926	1925	1924	1923
Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.
9,916-21	13,917-66	20,518-97	14,840-25	9,427-25

On the 31st December, 1927, 27 cases remained pending.

During the year two cases of murder were sent to the High Court for trial. It is noteworthy that there were no cases of robbery or dacoity. It appears that illicit liquor traffic is still carried on with impunity owing to the difficulty of detection inasmuch as persons who are convicted of being in possession of liquor always screen their suppliers. It is satisfactory to note that the police were successful in prosecuting one supplier to conviction and exemplary fine.

Mr. A. M. Grieve sat as Criminal Magistrate until the 21st March, when he was relieved by Mr. G. K. Knight-Bruce, who conducted the work of the Court until the 23rd May. From that date until the end of the year I was in charge of the Court.

The staff have, as usual, carried out their duties with tact and industry.

C. MANSEL REECE,
Resident Magistrate.

REPORT OF THE REGISTRAR OF PATENTS, DESIGNS AND TRADE MARKS FOR THE YEAR 1927.

During 1927, one application was received and approved for the grant of letters patent. All the remaining work of the registry was in connection with Trade Marks, of which 42 new applications were registered and 32 renewals of existing marks were granted. In addition there were miscellaneous applications, which comprised three registrations of change in address of registered proprietors, two applications for searches in the registers, and eleven applications for the registration of assignments of Trade Marks. During the year under review the total fees collected amounted only to Rs. 1,220. This falling off as compared with the year 1926 is principally due to the fact that only 32 renewals of Trade Marks have been registered this year as against 86 in the previous year.

A comparative table is appended showing the details of new registrations and fees collected in the Protectorate during the last three years:—

Year.	Trade Marks.	Designs.	Patents.	Fees in Rupees.
1925	47	—	1	3,200
1926	57	—	—	2,161
1927	42	—	1	1,220

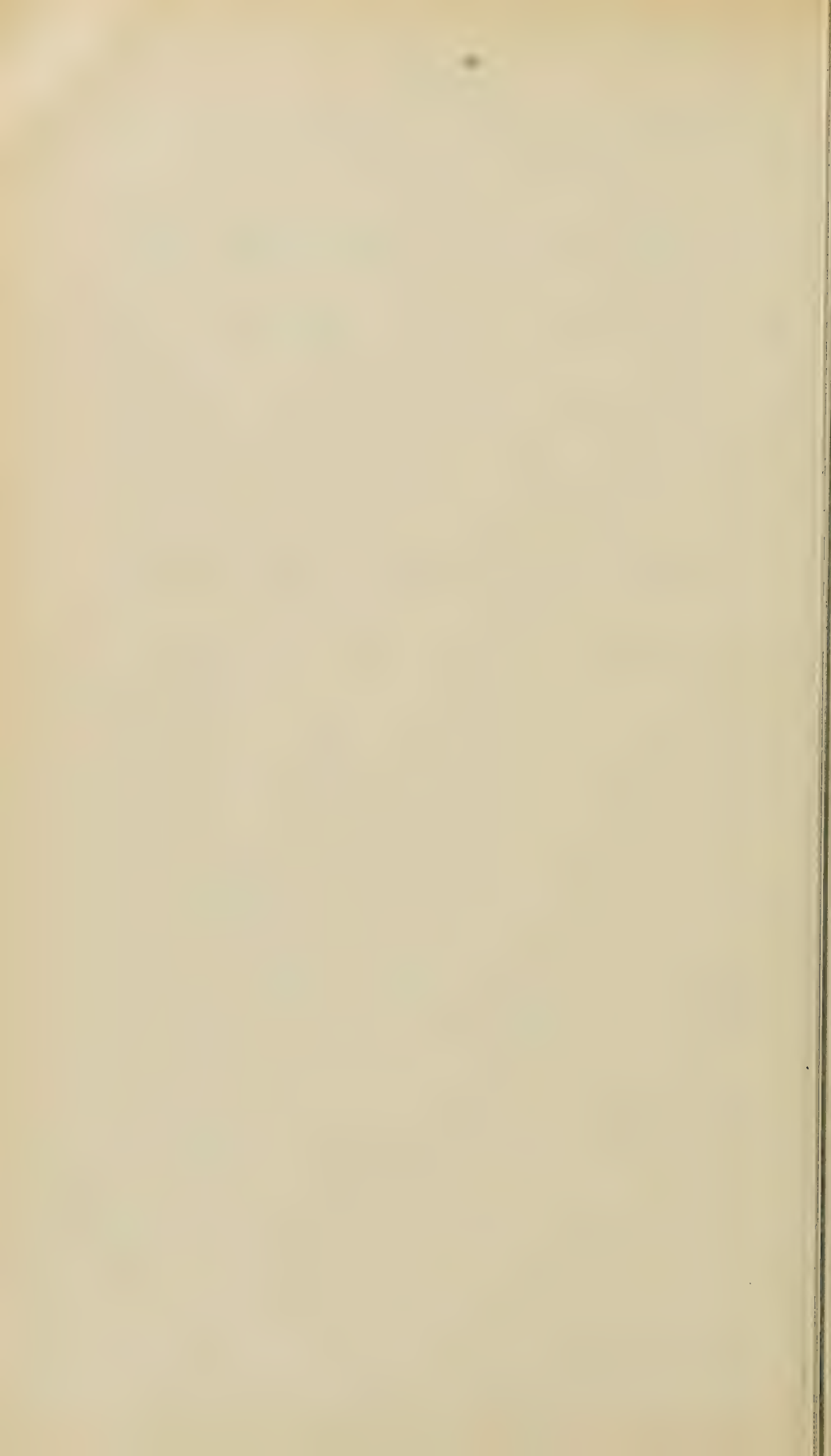
H. RALPH HONE

Registrar,

of

Patents, Designs and Trade Marks

Zanzibar, 31st December, 1927.



Zanzibar Protectorate.

REPORT ON THE ZANZIBAR POLICE.

FOR THE YEAR 1927.

PART I.

1. *Change (Officers and British Non-Commissioned Officers):*—
Lieut.-Colonel W. H. Murphy, D.S.O., T.D., was in command of the Force for the whole year.

Mr. L. E. Skinner, Assistant Commandant, having returned from vacation leave, resumed duty on the 20th of January.

Mr. W. Manning, Superintendent-in-Charge, Central Police Station, acted for Assistant Commandant during the latter's absence on leave, and reverted to his substantive appointment on the 20th of January.

Mr. Manning proceeded on vacation leave on the 12th of March, and returned from leave and resumed duty on the 23rd of October.

Mr. B. Wardle, Superintendent, was in charge of the Criminal Investigation Department for the whole year and also acted as Immigration and Embarkation Officer.

Capt. A. D. MacM. O'Morchoe, Superintendent, returned from vacation leave and resumed duty on the 26th of January. He acted as Superintendent-in-Charge, Central Police Station, during Mr. Manning's absence on leave.

Capt. F. H. Bustard, Superintendent, acted as Adjutant, Ziواني, until he proceeded on vacation leave on the 5th of July, when the Assistant Commandant took over his charge.

Sergeant-Instructor W. K. Thompson was stationed at the Ziواني Barracks during the year other than from the 3rd of October to 10th of November when he was engaged in the construction of the Rifle Range at Chake Chake, Pemba.

Mr. G. Wright, Bandmaster, His Highness the Sultan's Band, proceeded on sick leave on the 24th of June and had not returned at the end of year.

The duties of Firemaster were performed by Mr. Manning from the beginning of the year to the 12th of March when he proceeded on leave, by Capt. The O'Morchoe from the 12th of March to the 1st of December and by Mr. Manning from the 1st of December to the end of the year.

2. *Strength*.—The Force was reduced by ten third-grade constables from January 1st on the grounds of economy.

Owing to the high cost of passages it was decided to reduce the number of Nyasaland natives in the Force, and twenty-two, whose time expired during the latter part of the year, were not re-engaged.

Authority was received to enlist locally twenty-five recruits over the establishment to take the places of those discharged.

No difficulty was experienced in enlisting these recruits, and they had all been absorbed into the Force by the end of the year. The Force was short by seven constables and one gunner at the end of the year.

The following table gives the sanctioned and actual strength of the Force on December 31st:—

	Sanctioned.	Actual.
Commandant	... 1	1
Assistant Commandant	... 1	1
Superintendents	... 4	4
Sergeant-Instructor	... 1	1
Paymaster	... 1	1
Quartermaster	... 1	1
Inspectors	... 2	1
Assistant and Sub-Assistant Inspectors	... 16	17
Regimental-Sergeant-Major	... 1	1
Quartermaster-Sergeant	... 1	1
Company—Sergeant-Major	... 5	5
Sergeants	... 20	20
Corporals	... 20	20
Constables	... 465	458
Water Police	... 25	25
Detective Company—Sergeant-Major	... 1	1
Detective—Sergeants	... 2	2
Detectives	... 19	19
Gunners	... 6	5
Band	... 36	36
Followers	... 12	12
Clerks	... 2	2
	—	—
Total	642	634
	—	—

2. (b) *Inspector Cadre*.—During the year one Indian Assistant Inspector resigned at his own request and another Indian Sub-Assistant Inspector was dismissed on conviction under Section 422 Penal Decree (criminal breach of trust), and was sentenced to 14 months' rigorous imprisonment. Their places were taken by an Arab and a Comoro, both locally born and educated.

Eight Assistant and Sub-Assistant Inspectors passed their Preliminary or Confirmation Examinations, and the standard of results achieved was satisfactory.

One Sub-Assistant Inspector was promoted to Assistant Inspector.

The post of Finger-Print and Photographic Expert remained vacant throughout the year owing to the lack of suitable candidate.

An Assistant Inspector, one of the two Punjabis recruited from India in 1925, was taught the classification and filing of finger-prints by the Superintendent-in-Charge, C.I.D., and is now capable of doing this work satisfactorily.

The three literate constables reported as enlisted last year have been increased to five, and an uniform askari is performing the duty at another station.

Owing to the financial stringency during the year, funds could not be found to provide them with a separate type of uniform to that worn by the N.C.O.'s and men as advocated in last year's report and, consequently, they remained in mufti.

The general progress of the whole of this cadre has been satisfactory, and the amelioration of salaries during the year has made them more contented.

2. (c) *Distribution*.—The following table shows the distribution of the Force:—

SCHEDULE 2 (c). Distribution.

	Officers	Sergt. Instructor	Paymaster	Quartermaster	Inspector	Assistant Inspectors	Sub-Assistant Inspectors	Regimental Sergt. Major	Quartermaster Sergeant	Company Sergt. Majors	N. C. O's.	Constables	Detective Coy. Sergt. Major	Detective Sergts.	Detectives	Clerks	Tailors	Armourers	Female Searcher	Swce	Motor-boat driver	Motor-boat boys	Sweepers	Total
Zanzibar City	5	...	1	1	1	4	6	1	1	4	21	267	...	2	18	2	2	1	1	...	1	2	4	345
Water Police	...	...	...	...	...	...	...	...	...	...	2	23	...	...	...	...	...	...	...	...	...	...	...	25
Gunners	...	...	...	...	...	...	...	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	5
Band	...	...	...	...	...	...	...	...	...	...	1	32	...	...	...	...	...	...	...	...	...	...	...	36
Mkokotoni	...	...	...	...	...	...	...	...	...	...	2	31	...	...	...	...	...	...	...	...	...	...	...	34
Chwaka	...	...	...	...	...	...	...	...	...	...	2	16	...	...	...	...	...	...	...	...	...	...	...	18
Mwera	...	...	...	...	...	...	...	...	...	...	2	21	...	...	...	...	...	...	...	...	...	...	...	24
Rububu	...	...	...	...	...	...	...	...	...	...	1	9	...	...	...	...	...	...	...	...	...	...	...	10
Weti	...	...	...	...	...	...	...	...	...	...	3	34	1	...	1	...	...	...	...	1	...	...	...	39
Chake-Chake	...	...	...	...	...	...	...	...	...	...	3	37	...	...	...	...	...	...	...	...	...	...	...	42
Mkoani	...	...	...	...	...	...	1	...	...	...	3	19	...	...	...	...	...	...	...	...	...	...	...	23
Leave	1	1	...	...	...	...	1	...	...	1	4	24	...	...	...	...	...	...	...	...	...	...	...	33
Total	6	1	1	1	1	9	8	1	1	5	47	517	1	2	19	2	2	1	1	1	1	2	4	634

3. *Nationalities and Native Tribes.*—The Force is composed of seven Europeans, four Goans, eight Asiatics, four Baluchis, ten Arabs and 601 Africans.

The principal tribes amongst the Africans are as follows:—Wanyasa, 19; Yao, 73; Angoni, 59; Apotola, 7; Anyanja, 46; Anguru, 12; Akokola, 9; Atonga, 5; Wasungu, 3; Wamanyema, 19; Wanyamwezi, 73; Wadengereko, 17; Wazaramu, 17; Wasukuma, 38; Wamakonde, 7; Wasumbwa, 11; other tribes, 196; Total, 601.

Nothing can be added to the last year's remarks to the effect that the Nyasa does not make an ideal policeman and that the Tanganyika native is more adaptable to local conditions.

4. *Education.*—The police school at Ziwani is carried out on the same lines as previously, and progress can be reported in that 17 N.C.O.'s and men qualified for the Rs. 2 per month allowance for writing Swahili in Roman characters. There are now 37 N.C.O.'s and men drawing this allowance and six the Re. 1 per month for writing Swahili in Arabic characters. The majority of recruits, on completion of their training, know the alphabet, figures, addition, subtraction and multiplication.

The Honourable the Director of Education inspected the school during the year, and expressed his satisfaction at the curriculum and the progress of the students.

5. *Length of Service.*—Of the African police serving on the 31st December, six had twenty years' service or over, thirteen between fifteen and twenty years, twenty-three between ten and fifteen, 158 over five years and 371 under five years.

6. *Casualties.*—The following figures show the casualties amongst the N.C.O.'s and men:—

	1926.	1927.
Died	... 4	6
Deserted	... 1	—
Dismissed for misconduct	... 16	14
Discharged medically unfit	... 13	18
Unlikely to become efficient	... 14	16
Unsuitability	... 4	4
Time-expired	... 19	40
At own request	... 1	—
Age limit	... 1	—
Services no longer required	... 1	2
Transferred to Prisons service	... 1	2
	-----	-----
Total	75	102
	-----	-----

Note.—Conviction by a Court entails dismissal for misconduct. There were eleven such cases.

The increase of men taking their discharge time-expired in 1927 to those in 1926 is due to the reduction of Nyasaland natives.

As an indication of the popularity of the Force, only two men took their discharge voluntarily on becoming time-expired during the year.

7. *Health*.—The general health of the Force in Zanzibar has remained good, although there is an increase in the number of deaths and invalidings. The average number of N.C.O.'s and men at Ziwani was 376, and average number off duty per diem was 7.79 or 2 per cent.

The causes of death were as follows:—

Tuberculosis	... 1
Paralysis	... 2
Heart Disease	... 1
Pneumonia	... 1
	—
	5
	—

The discharges on account of medical unfitness were as follows:—

Tuberculosis	... 4
Defective eyesight	... 4
Ulcers	... 2
Epilepsy	... 2
Deafness	... 1
Tabes Dorsalis	... 2
Syphilis	... 1
Gonorrhœa	... 1
	—
	18
	—

The sanitation of the lines was satisfactory throughout the year, and the mosquito inspectors rarely found mosquito larvæ within the camp boundary.

Large number of *stegomia* invaded the camp owing to the heavy rains at the end of the year.

The health of the men in the out-stations has also been good.

8. *Enlistments*.—No difficulty has been experienced during the year in obtaining recruits, and the stamp of men offering is even better than in the past.

The Adjutant's office at Ziwani is frequently thronged with natives requesting enlistment, and it is estimated that approximately one in ten are finally accepted.

The table below shows the tribes of those enlisted, and it is a matter of regret that only one Zanzibar born native was enlisted during the year, but none at all were enlisted last year.

The native in question is a Comoro, and has been educated in the Government School and can speak and write English quite well. It is hoped that he will turn out a success and be the means of attracting others. On completion of his recruits course, he will be posted to a charge office or outpost as a literate constable.

Eighty-three recruits were enlisted during the year and, with eighteen remaining from last year, the Depôt staff dealt with one hundred and one. Of these fifty-eight passed out, seven discharged (unlikely to become efficient), two discharged (medically unfit), one transferred to C.I.D. staff, thirty-three remaining on December 31st. Total 101.

The following table shows the tribe of the recruits, all of whom were enlisted locally:—Wanyamwezi, 27; Wasukuma, 16; Other Tanganyika Territory natives, 22; Nyasaland, 7; Congo, 2; Uganda, 1; Northern Rhodesia, 4; Kenya, 3; Zanzibar, 1. Total 83.

9. *Training and Instruction.*—The training and instruction of the men has followed the lines indicated in the report for 1926.

During the course of the year, the long-awaited "Police Catechism" was received from the printer. It contains seventeen chapters in English and Swahili dealing with such subjects as the general duties of a police officer; the use, care, scale of, issue of, arms, clothing and equipment; pay and allowances; manner of giving evidence in Courts and the method of service or execution of various judicial instruments. Every N.C.O. and man receives one as a personal issue primarily to encourage him to read it in his spare time, or if he is illiterate, to be read to him by others.

N.C.O. refresher classes and recruits are lectured for half an hour daily, and trained men receive frequent lectures from its contents.

During the year, Government authorised the increase of the allowance of ammunition per man from twenty-five to fifty-five rounds.

A modified course as laid down for the Territorial Army was adopted.

The annual course was fired at the Bet-el-Ras Range in Zanzibar and at Chake Chake in Pemba, where a range has been built during the year.

Three hundred and ninety-eight African ranks fired the full course, twenty-eight were exempted on account of age or physical disabilities and twenty-five were not exercised on account of their being on leave or sickness. The results of the course were as follows:—

Marksmen	... 44
First-class shots	... 56
Second-class shots	... 91
Third-class shots	... 207

Total 398

The Headquarters Wing (No. 16 Platoon) scored the highest average with 73 out of 115.

No. 397 Corporal Saleh (No. 1 Platoon) was the best shot with 103 out of 115.

The Lewis gun teams have not been exercised during the year.

10. *Conduct.—(a) Punishments.—*

	1926.	1927.
Dismissed	... 15	18
Sentenced to imprisonment	... 7	6
Sentenced to fine	... 15	5
Sentenced to minor punishments	... 94	76
Sentenced to corporal punishments	... 24	12
Reduction in rank or grade	... 21	10
Reprimanded	... 10	2
Severely reprimanded	... 1	—
	187	129

Out of twenty deferred punishments awarded, five were confirmed, eleven remitted and four pending.

Of those men punished judicially and dismissed the Force, two were convicted for theft, one for cheating, six for assault, one for extortion and one for criminal breach of trust.

The gratifying decrease is attributed to the elimination of unsuitable men and the tightening up of discipline. Good N.C.O.'s ensure this, and only those who show powers of command are now promoted.

A good policeman does not mean a good disciplinarian, or one who is capable of taking command of a small unit—be it that of a beat unit or one of the component parts of a company organization. This shortcoming is soon detected by the men, slackness, inefficiency and lack of respect ensue, and the whole structure falls to the ground. In former years promotion was not based on solid grounds with obvious results, but the new regime of a dépôt-training centre, concentrated out-stations and officers residing at Ziواني and with the men have changed all for the better.

(b) *Rewards for Meritorious Service.*—His Majesty the King was pleased to confer the "African Police Medal for Meritorious Service" on the following N.C.O.'s and men:—

No. 423 1st Sergeant Mohammed Juma (17 years' service).

No. 546 W.P. Sergeant Mohammed Ibrahim (16 years' service).

No. 236 1st Const. Sudi Hamisi (18 years' service).

His Highness the Sultan presented the medals on a parade of all ranks at Ziwani on 28th July.

(c) *Acts of Bravery and Instances of Individual Good Work.*—One Assistant Inspector, three native police, three water police and seven detectives were commended during the year.

In addition, a water police constable has been awarded on two occasions a monetary reward, and a detective once.

No. 239 Corporal Mohamed Thomas was commended in General Orders for the tactful way in which he conducted a murderer to the Central Police Station. Although surrounded by a very hostile crowd, which was intent on lynching the prisoner, this N.C.O. succeeded in carrying out his duty in accordance with the best traditions of the Force.

11. *Housing the Force.*—No major works for this department have been carried out during the year. Various minor repairs to outposts in Pemba have been executed.

In the matter of the reduction of outposts so long advocated by this department, His Excellency the British Resident proposed a scheme which has enabled this matter to be settled satisfactorily.

Provision has been made in the 1928 estimates for the permanent housing of the police at the selected sites for these outposts.

Provision has been made also for additions to the existing quarters at Weti and for new quarters at Mkoani, leaving only the question of additional quarters at Chake Chake outstanding.

12. *Inspections.*—The Commandant and Assistant Commandant inspected Bububu five times, Mwera three times, Chwaka three times, Mkokotoni five times, Mangapwani once, Mahonda five times and Pemba stations five times. In addition, Mr. Manning visited Pemba for sixteen days in November, during which time he prosecuted in the High Court, carried out the musketry course and inspected all charge offices. Mr. Wardle also visited Pemba on two occasions to investigate serious cases and inspected all charge office books.

13. *Events of the Year.*—The customary parade took place on the occasion of His Majesty the King's birthday, in which five officers, two hundred N.C.O.'s and men, band, drums and artillery took part. The parade was commanded by the Commandant. His Excellency the British Resident was pleased to comment on the smartness and efficient manner in which the parade was carried out.

December 9th being the occasion of the anniversary of His Highness the Sultan's accession, a torchlight tattoo was held in his honour. The parade consisted of two officers, the sergeant-instructor and one hundred and seventy-six native ranks with band, drums and artillery under the command of the Commandant. His Highness was pleased to express his approval of the idea and of its staging and execution. His Excellency was also pleased to congratulate the police on the high

standard of drill and control which marked the tattoo. In addition to many Europeans, Indians and Arabs, thousands of natives witnessed the tattoo, which to them was a novelty, and expressed appreciation by frequent clapping and huzzaing.

The competition for the East and West African Police Shooting Cup was instituted during the year. The police team scored an average of 69.7 per man out of a possible 85.

Guards of honour were furnished for His Highness the Sultan on various State occasions, including the opening of the Legislative Council, and for His Excellency the Commander-in-Chief, East Indies Squadron, on the occasion of his visit. A guard of honour was also provided on Armistice Day.

His Highness the Sultan, accompanied by Prince Abdulla and His Excellency the British Resident, visited Pemba during the month of September. A guard of honour, the band and bugles, under the command of Capt. The O'Morchoe, travelled with the Royal Party, and His Highness was pleased to express his appreciation of their services, as also of the police stationed in Pemba.

14. *Cost.*—The estimated cost of the Force, Fire Brigade and Band was:

	Rs.
Personal Emoluments and other Charges ...	3,98,886
Special Expenditure ...	11,910
	<hr/>
Total	4,10,796
	<hr/>

The cost per head of population amounts to Rs. 2-05 cents.

PART II.—CRIME.

1. *General.*—On the whole, the year 1927 has been devoid of incident from the point of view of crime.

Generally, there has been little fluctuation in the crime figures for 1926 and 1927, the only noticeable increase being under the heading of grievous hurt.

As usual, the majority of crime comes from Zanzibar town.

It is gratifying to report that not a single case of dacoity has been reported from Zanzibar island, although in previous years this type of crime was very prevalent in the shamba areas. This immunity is undoubtedly due to the conviction of the gang of dacoits referred to in my report for 1926.

Out of 3,522 cognizable cases investigated by the police, 1,775 ended in conviction.

2. *Investigation and Detection.*—There has been a steady improvement in the investigation of crime. This is due to the fact that officers now realise the importance of personally investigating cases on the spot, instead of as formerly in many cases conducting their enquiries from the Police Station and relying for local information on the report of detectives or constables.

Weekly lectures on crime and investigation have been held by the Superintendents, and have been of great value in educating the younger officers in the rudiments of their profession.

Much still remains to be done, but I am satisfied that in this important branch of police work, the detection of crime, much progress has been made.

3. *Murder and Crimes of Violence.*—Three murders occurred during the year, the same number as in 1926. The most serious of these was a case in which a native killed his wife and then ran amok and seriously injured a number of persons. He was subsequently found guilty of culpable homicide not amounting to murder and sentenced to ten years rigorous imprisonment.

There was a marked increase in cases of grievous hurt. This is difficult to account for.

There were seven cases of rape during the year, the victims in most instances being small children.

It is satisfactory to report that no case of rioting occurred during the year.

4. *House-Breaking and Theft.*—Compared with 1926, there has been a slight decrease in house-breaking and a rather more marked increase in theft.

Cases of house-breaking of the professional type have been few, and in most cases of this nature the offenders have been brought to book.

It is interesting to note that in cases of house-breaking investigated by the C.I.D., fifty per cent of the persons convicted were found to be mainland natives.

The majority of these hail from Tanganyika Territory, and in most instances were recent arrivals in Zanzibar at the time of their arrest. It may be necessary in the future to arrange for closer co-operation with the police of neighbouring territories in reporting and restricting the movements of known offenders.

5. *Criminal Investigation Department.*—The department is now in fair working order. It consists of one European Superintendent, four Inspectors and 22 rank and file.

The department investigated 281 cases during the year.

In addition to the work of investigation much time and energy has been spent in pursuing the ramifications of the illicit opium trade.

This continues to be a serious menace in Zanzibar, and there is no doubt that very large profits are still being made by those engaged in it. Forty-eight prosecutions were instituted during the year under the abuse of Opiates Prevention Decree, and much information has been obtained regarding this traffic. Although no important case was detected during the year, the fruits of enquiry began to appear in the early days of 1928, when an important capture was made of a leading importer, who was arrested in possession of a large quantity of opium.

The Finger-Print Bureau, which is run by the department is now working satisfactorily, although the task of re-filing and inspecting slips is not yet complete.

During the year 1,924 slips were received in the Bureau, and of these 733 were identified.

A card index of suspects and convicts has now been started as an adjunct of the Bureau, and so far 789 cards have been filed. The index should ultimately be a very useful record.

6. *Fire Brigade*.—During the year 24 fires were reported, 21 within the town area and three in outlying districts.

The following are the only outbreaks worthy of comment:—

May 2nd, 1927.—Kwa Haji Tumbo. Thirteen huts destroyed.

August 22nd, 1927.—Kisimamajongo. Forty huts destroyed.

August 23rd, 1927.—Mfereji Maringo.—Twenty-three huts destroyed.

In none of these cases was it possible definitely to assign a cause of the outbreak, but it is fairly safe to assume that they were due to carelessness.

Fires in the Ngambo district would not be so serious if the natives were not so selfish and lethargic. It is the custom of the native of this district to stand by and render no assistance during an outbreak, unless and until his own particular house is involved. If all living in the neighbourhood would assist to extinguish the original outbreak, far fewer huts would be involved.

Only one outbreak occurred in a stone building and was not of a serious nature.

During the year a considerable amount of new apparatus was received, including a one-ton Morris fire-tender and thirty-foot extension ladder. This additional apparatus has added considerably to the efficiency of the Fire Brigade.

Towards the end of the year a fire alarm syren was installed on the roof of the Bet-el-Ajaib.

Weti, Chake Chake and Mkoani stations were supplied with buckets and ladders.

	No. of Cases.		Increase.	Decrease.	No. of cases in which convictions were obtained.		No. of cases in which scene of offence was visited by Investigating Officer.	
	1926	1927			1926	1927	1926	1927
Murder	3	3	...	...	...	...	3	3
Attempted murder	1	1	...	...	1	...	1	1
Culpable homicide	2	2	...	...	2	1	1	2
Grievous hurt	19	52	33	...	11	35	8	17
Dacoity	16	1	...	15	1	1	12	1
Robbery	13	13	...	...	2	2	5	5
House-breaking	351	534	...	17	58	52	190	247
Theft (exceeding Rs. 100)	81	90	9	...	24	24	37	90
Theft (not „ „)	665	735	70	...	225	231	249	358
Theft (Agr. Produce)	52	96	44	...	42	83	11	25
Rioting	...	...	...	...	...	...	...	...
Assault on police	31	30	...	1	21	23	4	8
Offences not specified	574	464	...	110	284	273	89	152
Total	1,808	1,821	156	143	671	725	610	809

	No. of cases dealt with.		Increase.	Decrease.	No. of cases in which convictions were obtained.	
	1926	1927			1926	1927
Police Decree ...	442	289	...	153	402	266
Vehicles and Traffic Decree...	559	323	...	236	489	274
Customs Decree ...	10	4	...	6	8	3
Liquor Licensing Decree ...	41	33	...	8	37	20
Native Liquor Decree ...	235	199	...	36	221	183
Abuse of Opiates Decree ...	31	48	17	.	31	41
Arms and Ammunition Decree	19	10	...	9	14	7
Agricultural Produce Decree ..	114	85	...	29	98	81
Gambling Decree ...	38	52	14	...	27	43
Other Local and Special Laws	225	159	...	66	176	132
Total ...	1,714	1,202	31	543	1,453	1,050

9. Comparative table of true cases of non-cognizable crime investigated by the police:—

	1926.	1927.	Increase.	Decrease.
No. of Cases	60	45	—	15

10. Comparative table of results obtained in non-cognizable crime:—

	No. of true cases dealt with.		No. of cases in which convictions obtained.	
	1926.	1927.	1926.	1927.
No. of Cases	59	45	50	29

14. *Escapes from Police Custody.*

	1926.	1927.
No. of persons escaped	27	18
No. of persons re-captured	23	13
No. of cases in which Police held to blame ...	3	1
No. of cases punished magisterially...	—	—
No. of cases punished departmentally ...	3	1

15. *Services of Process.*

Nature of Process served.	1926. No. served.	1927. No. served.
Criminal Summons	156	277
Civil Summons	90	82
Witness Summons (Civil)	5	4
Witness Summons (Criminal)	456	528
Warrants of Arrest	122	160
Warrants of Attachment of Property ...	13	59
Decrees, Notices, Orders, etc.	79	12

16. *Return of Sudden and Unnatural Deaths Investigated by the Police.*

Year.	Number of cases in Which no cognizable offence disclosed.	Number of cases in which cognizable offence disclosed.	Total.
1927.	30	10	40

17. *Lost and Found Property.*

Lost Property.	Found Property.			
	Found by Police.		Found by Public.	
Rs. Cts.	Rs.	Cts.	Rs.	Cts.
12,162 75	5,045	25	3,036	50

18. *Stolen Property.*

Stolen.	Recovered.	Percentage.
Rs. Cts.	Rs. Cts.	
79,973 78	21,635 05	28

19. Warrants handed to the police for execution:—

Year.	No. remaining from the previous year.		No. received for execution during the year.		No. executed during the year.		No. transferred to other Stations and not returned.		No. cancelled during the year.		No. remaining unexecuted.	
	Arrest	Search	Arrest	Search	Arrest	Search	Arrest	Search	Arrest	Search	Arrest	Search
1926	10	..	130	39	102	30	..	..	8	..	30	..
1927	30	..	169	173	150	150	1	..	9	..	40	23

20. Table of Results obtained under the Lunacy Decree.

Number of cases reported ...	...	...	...	56
Number of cases discharged ...	...	...	...	15
Number of cases in which lunatic committed to Asylum	39			
Number of cases in which lunatic allowed by the magistrate to be kept under the charge and care of his or her relatives, sent to Walezo Poor House, etc	...	2		

21. Pounds Decree.

Number of animals seized by police during the year	702
Approximate value of the animals seized by the police during the year	Rs. 11,336

22. *Immigration.*—The duties of Immigration Officer have been performed throughout the year by the Superintendent-in-Charge, C.I.D. During the year 557 steamers entered the harbour and 24,484 persons landed in Zanzibar. Of these, 4,741 arrived by dhow and the remainder by steamer.

23. Summary of patrols and mileages. (Zanzibar).

Europeans										Non-Europeans															
Rail		Steamer		Motor-Car		Motor-Cycle		Foot		Total		Rail		Steamer		Motor-car		Motor-cycle		Foot		Total		Grand Total	
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
..	..	14	1,100	281	1,488	25	136	21	65	341	2,789	42	350	199	15,820	204	2,451	359	5,035	1,554	22,360	2,358	46,016	2,699	48,805

Note.—Column 1—No. of patrols.

Column 2—Mileage.

Statistics are not available for Pemba.

24. *Motor Vehicles.*— (a) *Motor Vehicle Registration.*—The totals of all classes of motor vehicles registered during the year are:—

Motor-cars	226
Lorries	13
Buses	68
Motor cycles	75
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Total	382
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(b) *Testing of Motor Drivers for Certificates of Competency.*—This service is performed by the police. Number of drivers' certificates of competency issued: 1926, 331; 1927, 216.

(c) *Motor Traffic.*—This is noticeably on the increase. To cope with it a specialist traffic squad has been formed. Their duties are the prevention and detection of offences against the Vehicles and Traffic Decree.

The traffic point askaris have all received special instruction, and a marked improvement in the control of traffic is noticeable. This is very important in so congested a town as Zanzibar and where, with its maze of narrow streets and alleyways, the motorist must co-operate with the police in heeding traffic signals, which are given in the best interests of the general motoring public.

The standard of competency in motor driving is, I consider, good.

The old trouble of speeding is still with us, but shows improvement within the township, where the speed limit is ten miles per hour. Outside the township there is no speed limit, and the speeding along the country roads is fast becoming a public danger. I strongly advocate a speed limit for motor buses and motor lorries, irrespective of the number of passengers or weight of load the vehicle is licensed to carry. These are as a rule driven by half-educated natives, who have little understanding of the dangerous toys they so recklessly play with and no sense of responsibility towards the people who crowd their vehicles. Their sole aim is to cover the journey as quickly as possible and return for fresh fares.

I am, however, quite conscious of the great unpopularity of any speed limit and of the unpopularity it invariably brings on the police whose duty it is to impose it.

Summary of Street Accidents.

Accidents due to				MOTOR.				Vehicles (animals drawn) & Carts.	Rickshaws.	Pedal Cycles.	Total
				Cars.	Cycles.	Lorries and Buses.					
Negligence	...	...	1	1	4	4	...	5	15
Intoxication	...	...	1	...	1	...	...	1	3
Mechanical breakdown & faults	...	...	...	...	1	...	...	2	3
Skids and bad roads..	...	...	...	...	...	...	...	...	...
Blind corners	...	...	...	...	...	...	...	...	...
Pedestrians' fault	...	...	1	...	3	1	...	1	6
Cyclists' faults	...	...	1	...	1	1	...	5	8
Other causes, human errors and uncertain	...	...	1	...	1	1	...	1	4
Total			...	5	1	11	7	...	15	39	

26. *Conclusion.*—it is gratifying to report an all-round and marked advance in efficiency of all units of the Police Department. Never was better police work done. All ranks show increased knowledge and display a keenness marked with tact and patience in carrying out their oft-times difficult duties.

I have with great pleasure to record my appreciation of the valuable assistance rendered my department by Administrative Officers in charge of districts. They have shown in many ways not only their keenness to assist in the attainment of police efficiency but in the interest they take in the welfare of the police under their command. There is growing up a healthy spirit of out-station *esprit* and emulation, without which little progress could be expected or maintained.

My staff, European, Asiatic and African, has rendered loyal support. I would especially mention the vigilance, activity and devotion to duty of Mr. Wardle, the Superintendent, C.I.D., and staff. This department, created in 1924, has more than justified itself. It started with little to work on, but has to-day in its grip much of the vital data necessary for the protection of the individual and the community. The activities for evil of many have been either so successfully grappled with or so discouraged by active efficiency that the well-disposed citizen can live in an atmosphere of peace and confidence

Among the inspector and C.I.D. staff the following are commended: Inspector De Souza, Assistant Inspector Sultan Ahmed, Assistant Inspector Ali Abdulla, Assistant Inspector Fazal-ur-Rahman and C.-S.-M. Mtonga.

The following police have done good work, and are commended: R.-S.-M. Hamadi Mtilla, M.M., C.-S.-M. Jenga, No. 20 Sergeant Moses, No. 546 Water Police Sergeant Mohamed Ebrahim, No. 239 Corporal Mohamed Thomas, No. 206 1/Constable Bwando, and No. 17 2/Constable Khalfan.

The following, in the regrettable absence of Bandmaster Wright, have rendered excellent service: No. 607 Band Sergeant Caswa, No. 634 Band Corporal Kupa and No. 537 Drum-Major Manyassa.

W. H. MURPHY,
Commandant of Police.

Zanzibar, 3rd March, 1928.

Zanzibar Protectorate.

REPORT ON THE ZANZIBAR POST OFFICE FOR THE YEAR 1927.

1. *Revenue and Expenditure.*—The total Revenue of the Department amounted to Rs. 109,323 as compared with Rs. 101,950 in 1926, an increase of Rs. 7,373. This increase is principally due to abnormal sale of stamps owing to the introduction of the new issue.

The total Expenditure was Rs. 78,376 as compared with Rs. 77,781 in the preceding year, an increase of Rs. 595.

No credit has been taken for the value of free official services performed by the Department, nor has any expenditure in connection with postal work undertaken at the out-stations been debited to it.

A sum of Rs. 211-58 representing unclaimed money orders in respect of the years 1922, 1923 and 1924 was credited to Miscellaneous receipts during the year, and an overpayment of £385-18-2 made in 1926 on account of Carriage of Mails in respect of the years 1924 and 1925 was recovered during the year and credited to Miscellaneous Receipts.

2. *Mail Matter.*—The estimated number of letters, postcards, newspapers, book packets and samples and the actual number of registered articles dealt with during the year was 1,381,284 as compared with 1,309,915 in 1926. Following is the summary of the principal items:—

	Letters (estimated)	Postcards (estimated)	Newspapers, book packets & samples.	Registered articles (actual)	Total.
Internal ..	1,56,000	260	65,000	4,509	2,25,869
External:—					
RECEIVED FROM:					
United Kingdom ..	94,549	1,651	33,722	2,592	1,32,514
India ..	98,423	1,092	69,095	3,419	1,72,029
Kenya & Tanganyika ..	1,56,000	1,521	15,652	5,192	1,73,365
Other Countries ..	1,40,917	9,308	62,874	9,140	2,22,239
FORWARDED TO:					
United Kingdom ..	39,000	2,639	6,591	4,559	52,789
India ..	1,04,000	3,237	3,718	6,706	1,17,661
Kenya & Tanganyika ..	94,900	1,235	13,000	6,707	1,15,842
Other Countries ..	91,736	11,872	14,424	10,396	1,28,428
In transit ..	26,520	650	6,500	1,878	35,548
Total ..	10,02,045	33,465	2,90,576	55,198	13,81,284

3. *Undelivered Postal Matter*.—The number of articles dealt with in the Returned Letter branch was 6,461 as compared with 6,059 in 1926. 4,915 letters were returned to the countries of origin and 1,546 were received from the countries of destination being undeliverable.

4. *Parcels*.—The total number of parcels dealt with during the year was 12,642 of the declared value of Rs. 733,826. Of this number 10,571 parcels of the declared value of Rs. 545,061 were received from overseas, and 2,071 of the declared value of Rs. 188,765 were posted in Zanzibar for delivery abroad.

Compared with 1926 there was an increase in the number of incoming parcels and a decrease in the outgoing, but the value of the parcels in each case exceeded that recorded in 1926 by Rs. 47,000 and Rs. 4,000 respectively.

Rupees 35,181 were recovered on 1,062 parcels from Great Britain and Irish Free State under Cash-on-delivery system. This service has not been extended to any overseas country other than Great Britain, Northern Ireland and the Irish Free State.

There was no local posting of overseas Cash-on-delivery parcels during the year.

An increase from 11 to 22 lbs. in the maximum weight of parcels exchanged with Great Britain was introduced during the latter part of 1926. The additional facilities so afforded are being taken advantage of by the commercial community particularly.

Customs duty collected on overseas parcels amounted to Rs. 60,781.

Two thousand one hundred and sixty-two letter packets were challenged by the Department and the duty collected on these amounted to Rs. 4,686.

5. *Overseas Mails*.—The homeward mails during the year were carried by 63 steamers and the outward mails were brought by 74 steamers as compared with 60 and 70 vessels respectively in 1926.

The number of mails despatched to India and South Africa amounted to 31 and 63 respectively and the number received to 26 and 53 respectively.

The total number of mails received and despatched during the year amounted to 1,637 and 1,263 respectively as compared with 1,497 and 1,126 in 1926.

In all 498 steamers arrived with mails and 525 sailed during the year.

6. *Closed Bags in Transit*.—The number of mail bags in transit amounted to 3,230 as compared with 2,850 in 1926, the greater part of which was for the Tanganyika Territory.

7. *Money Orders*.—Although the total number of money orders issued and paid in the Protectorate during the year was less than that for 1926, the value of these orders however showed a considerable increase as compared with the previous year. This is entirely accounted for by increased drawings on Pemba during the clove season.

The Telegraph Money Order service is restricted to Pemba and Zanzibar, a few occasional telegraphic money orders to and from Great Britain and the Irish Free State being issued and paid during the year.

Following is a summary of the transactions:—

		1926.	1927.
Number of orders issued	...	11,335	11,229
Number of orders paid	...	6,517	6,077
		Rs.	Rs.
Amount issued	...	20,16,324	25,68,550
Amount paid	...	16,19,473	21,51,724
Commission on orders issued	...	16,698	17,933
Commission on orders paid	...	379	399

8. *British Postal Orders*.—The following statement shews the number and value of British Postal Orders issued and paid during 1927 in comparison with the previous year.

Year.	Issues.		Payments.	
	No.	Value.	No.	Value.
1926	2,115	£ 1,253	1,503	£ 1,150
1927	2,234	1,355	1,789	1,319

The poundage on postal orders sold amounted to £30 and the allowance by the British Post Office for this work was £4.

9. *Savings Bank*.—The total number of accounts opened up to the end of the year was 5,962 of which 3,375 accounts have been closed leaving 2,587 active accounts with Rs. 173,367-08 to their credit. The average balance to the credit of each depositor at the end of the year was Rs. 67-01.

Deposits.—Three thousand seven hundred and thirty-four deposits amounting to Rs. 209,897-68 were made during the year as compared with 2,790 totalling Rs. 133,968-28 during 1926.

Withdrawals.—These numbered 2,362 and amounted to Rs. 182,807-41 as compared with 1,704 amounting to Rs. 108,843-73 in 1926.

Interest.—The interest on investment of Savings Bank deposit money in National Bank of India amounted to Rs. 5,665-37. Of this amount Rs. 3,368-54 was paid to depositors and the balance Rs. 2,296-83 credited to Revenue.

The working expenses of the Bank were estimated at Rs. 2,240.

Of 2,587 depositors, Zanzibar accounts for 2,095 and Pemba for 492 and they are grouped according to their nationality as follows:—

African Natives	...	...	1,054
British Indians	...	...	750
Portuguese Indians	...	...	511
Arabs	...	...	156
Europeans	...	...	49
Other Asiatics	...	...	67
			<hr/>
Total			2,587
			<hr/>

The Annual account of the Savings Bank will be found in the Appendix.

10. *Wireless Telegraph.*—Seven thousand nine hundred and fifty-seven radio-telegrams were dealt with during the year as compared with 8,387 during 1926. Of this total 384 were cablegrams diverted via Zanzibar Wireless Station consequent on the cable interruption which took place during 3 days, 18/20th August, 1927.

Following are the details of the radio-telegrams dealt with:—

From Zanzibar to Pemba	3,567	
From Pemba to Zanzibar	2,883	
From Zanzibar to Ships	143	
From Ships to Zanzibar	447	
From Zanzibar to Kenya	194	Government Messages.
From Kenya to Zanzibar	290	..
From Tanganyika to Zanzibar	21	..
From Zanzibar to Tanganyika	28	..
From Kenya to Zanzibar	198	During cable interruption.
From Zanzibar to Kenya	186	..
		<hr/>
Total		7,957
		<hr/>

The revenue derived from radio-telegrams during the year amounted to Rs. 8,642, in which is included a sum of Rs. 672-50 collected on account of subscription for the British Official Wireless Press.

The Wireless Telegraph Expenditure is controlled by the Director of Electricity and Railway Department.

J. X. E. RODRIGUES.

Postmaster

POST OFFICE,

Zanzibar, 8th May, 1928.

SAVINGS BANK.

Statement of Receipts and Payments for the year ended 31st December, 1927.

To,	Rs.	cts.	By,	Rs.	cts.
opening balance	...	27	withdrawals made during the year	...	41
interest earned on deposits	...	37	interest credited to Revenue	...	37
interest credited to depositors' accounts	...	54	balance at the end of the year	...	08
deposits received during the year	...	68			
Total Rs. ...	3,61,839	86	Total Rs. ...	3,61,839	86

Statement of Assets and Liabilities for the year ended 31st December, 1927.

LIABILITIES.		ASSETS.	
To,	Rs.	By,	Rs.
Amount due to depositors	...	Amount invested in the purchase of India Government 6% Bonds, 1932, of the nominal value of Rs. 1,37,000 @ 107	...
	...	Cash in Treasury ...	...
Total Rs. ...	1,73,367	Total Rs. ...	1,73,367

Statement of Profit and Loss Account for the year ended 31st December, 1927.

To,	Rs.	cts.	By,	Rs.	cts.
Interest earned on deposits	...	37	Interest paid to depositors during the year	...	54
	...	...	Approximate expenses to work the Savings Bank ...	...	00
	...	...	Profit ...	...	83
Total Rs. ...	5,665	37	Total Rs. ...	5,665	37

Zanzibar Protectorate.

REPORT ON THE ZANZIBAR DISTRICT ADMINISTRATION

FOR THE YEAR 1927.

1. *Introduction.*—On April 17th I returned from leave and resumed duty as Senior Commissioner.

The Northern Sub-District was administered by Mr. J. P. Jones until November 17th when Mr. C. Seymour-Hall took over charge.

The administration of the Southern Sub-District, which includes the town of Zanzibar, was in the hands of the following officers:—

Mr. J. H. Vaughan, from January 1st to January 23rd; Mr. W. Addis, from January 24th to April 21st; Mr. J. S. Last, from April 22nd to June 16th; Mr. G. J. C. Taylor, from June 17th to September 9th; and Mr. J. S. Last, from September 10th to December 31st.

2. *Staff.*—Several changes in the clerical staff of the town office had to be made during the year owing to the opening of a new branch district office at Kikwajuni and to the transfer of clerks to and from Pemba.

Mr. A. Cotta relieved the head clerk, Mr. M. F. Fernandes, who went on leave in November.

No addition was made to the number of Akidas in Zanzibar island.

In the town and in the Mwera division Sheikh Msellem bin Mohammed el-Khalasi did excellent work, particularly in the organization of the new District office at Kikwajuni.

Owing to the difficulty of finding suitable candidates for the post of Akida, provision was made in 1926 for the engagement of four Arab cadets who would be specially trained for administrative work, but the selection of these has proved far from easy.

One cadet resigned, another displayed no aptitude for the work and was given a junior clerical post. The two remaining candidates

showed greater promise, especially Sheikh Hamed bin Jabir el-Farsi who was transferred from the 'Teachers' Training Class and is now working as Assistant Akida under Sheikh Msellem.

Sheikh Abdullah bin Said el-Kharusi was transferred to the Administration from the Health office and was sent to Mangapwani, after a preliminary training in town, to work under the Akida of that division.

No changes of importance have taken place among the shehas. Though their work appears to call for no special comment it has been generally good, and it is satisfactory to note the increasing interest which they take in their duties as official members of the district courts.

3. *District Courts*.—Sittings of these courts were held regularly and 153 cases were heard during the year.

The criminal jurisdiction of these courts was extended in order to include certain additional offences punishable under the Penal Decree and other local Decrees. This extension dated from November 19th.

The institution of these district courts has proved an undoubted success and it is certain that their public utility will increase year by year.

In October an office was opened in the native quarter of Zanzibar town for the administration of native affairs in the town area. A branch Post Office and Savings Bank were also established in the same building. The popularity of the step was soon noticeable and it is probable that this office will become a most useful administrative centre.

4. *Agriculture*.—Rain interfered considerably with the harvesting of the clove crop which promised at one time to be well above the average, but generally, plantation owners were satisfied with the profits they made, owing to the comparatively low price of picking.

The Clove Growers' Association came into being in April and meetings were held by the Director of Agriculture and myself in various parts of the island in order to explain the aims and advantages of the Association. Committees were formed in all the clove districts with the result that the clove plantation owners were induced to co-operate in reducing and controlling the price of picking.

This organization has had a distinctly beneficial effect on the industry and augurs well for the future. Fears were entertained that the labour supply would be adversely affected by the moderate prices offered for picking, but very few complaints were received from plantation owners as to paucity of pickers and considering the unfavourable weather the results were far from unsatisfactory.

While the rain undoubtedly injured the clove crop it encouraged natives to plant ground crops to an extent unequalled for many years.

Reports were constantly received of the damage caused to ground crops by pigs and monkeys, especially by the former. It was therefore decided to appoint a native expert pig trapper in order to abate this nuisance.

Wandering cattle were another cause of trouble to cultivators, but the extended jurisdiction which has now been granted to the District courts will enable them in future to cope with the owners of such cattle.

5. *Public Works*.—The extension of the road system continues and important work was done during the year in all parts of the island.

In the town the opening of the Hollis Road has proved of immense benefit to the public.

The Mangapwani road which serves one of the most important agricultural districts in the island was completed and opened to traffic on October 26th.

Later in the year the Director of Public Works and myself inspected the route of the future Makunduchi road and the work is now well in hand. From an administrative point of view this will be a road of the first importance as it will afford communication with the thickly populated villages in the South of the island which hitherto could only be reached by sea.

Repairs have been carried out to the numerous Government buildings in the districts.

At Chaani the Akida's court was completed.

6. *Police and Crime*.—Few cases of serious crime occurred during the year.

The Assistant District Commissioners report favourably on the conduct and health of the police under their charge and I have noticed a district improvement in the discipline of the police stationed in the districts.

In accordance with the policy of closing down the small out-stations it was found possible to abolish the police station at Ungujaukuu.

7. *Education*.—The district schools are now eight in number including the Mwembeladu school in the outskirts of the town.

The average daily attendance ranged from 28 at Muyuni to 84 at Makunduchi. Mr. Last in his report on the Southern District says

"The progress of these is highly satisfactory and most encouraging. The teachers are of good social standing and they are patient and sympathetic. The majority of the children appear to attend quite voluntarily and appreciate the benefits of the education they are receiving". I can thoroughly endorse his remarks. There is no doubt that the demand for education is increasing throughout the island.

8. *Medical and Sanitary Services.*—Like the village schools the dispensaries are doing most valuable work.

There are now twelve district dispensaries scattered about the island excluding the dispensaries at the Walezo Poor House, and in the Maternity Home. The large numbers attending daily show how much these dispensaries are appreciated.

There was an outbreak of small-pox in several outlying villages in the South of the island. Sixty-three deaths occurred. Vaccination was carried out systematically in the whole affected area, some 10,000 persons being vaccinated.

No cases of epidemic disease of cattle were reported.

9. *Inland Revenue.*—An appendix to this report gives statistics of the revenue collected by this department which is responsible for the collection of the sanitary and lighting rate in the town of Zanzibar and for the issue of passports, permits and licences.

Revenue derived from the Sanitary and Lighting rate showed a slight decrease owing to a larger number of exemptions. On the other hand a considerable reduction in the cost of collection has been effected.

Vehicles yielded approximately the same as last year, and with few exceptions the revenue is well up to the average.

Under the Stage Plays and Cinematograph Exhibitions (Amendment) Decree, 1926, theatre licences and permits for exhibiting films are issued from this office.

During the year 125 films were censored by myself and other members of the Licensing Board.

P. SHELDON,
Senior Commissioner

DISTRICT ADMINISTRATION AND TRANSPORT.

Details of Revenue.

Amount collected in

1925	1926	1927	
Rs.	Rs.	Rs.	Cts.

Licences and Internal Revenue
not otherwise specified.

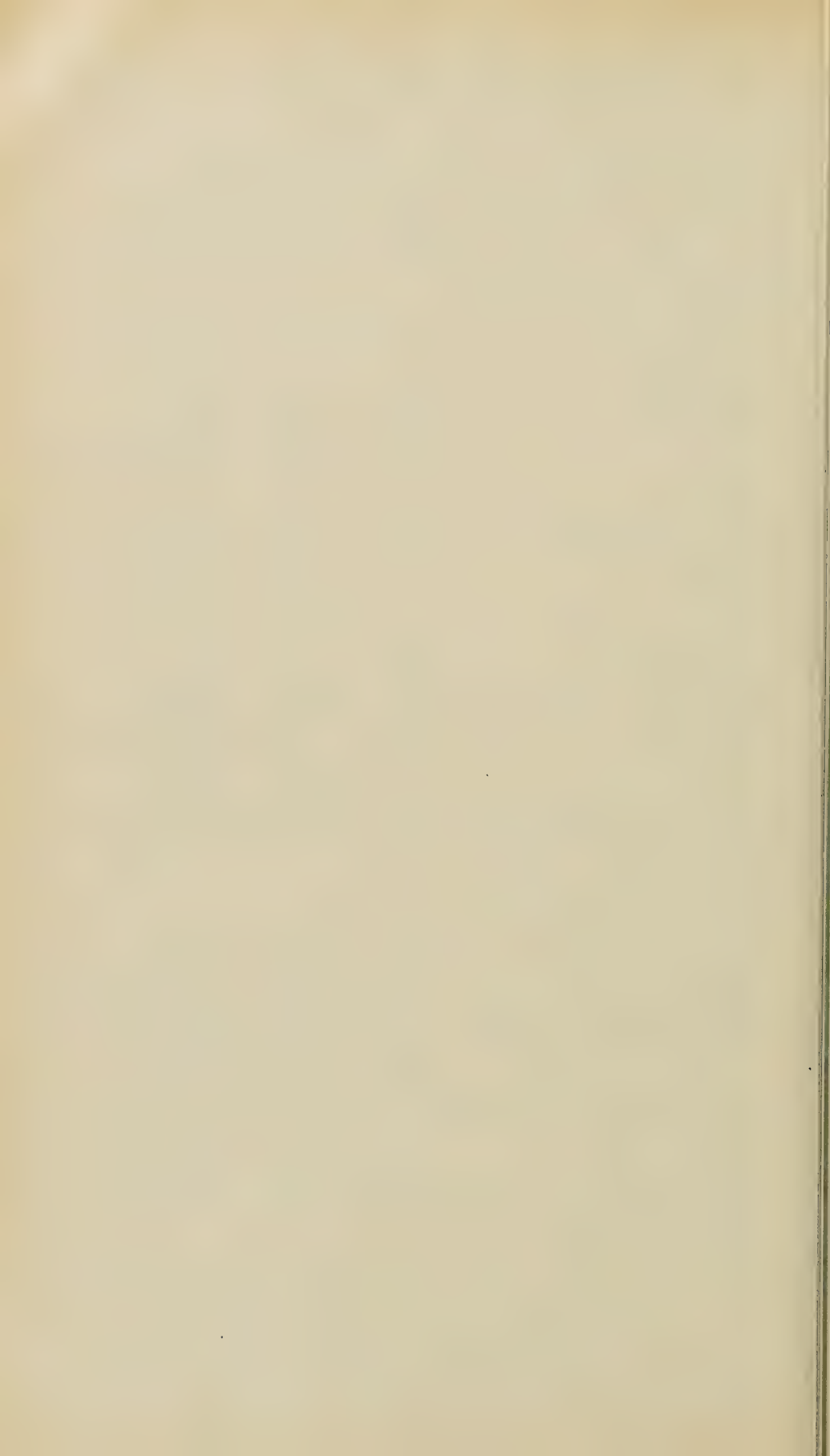
Aerated Waters	45	45	97	00
Auctioneers	—	—	996	89
Beach Porters	—	—	81	25
Brokers	6,305	6,092	6,311	00
Dairy	4	20	106	00
Dogs	20	40	40	00
Druggists	—	—	1,570	00
Gold and Silversmiths	975	840	1,195	40
Guides	—	—	162	00
Hawkers	519	709	1,474	00
Liquor	9,043	9,121	12,905	54
Money Changers	165	130	140	00
Money Lenders	1,360	1,200	3,720	00
Ngoma	3,002	3,194	6,258	00
Pawn Brokers	7,339	8,502	8,148	74
Produce	259	305	1,600	00
Ship Chandlers	—	—	1,122	00
Vehicles	5,745	15,979	15,370	25
Sanitary and Lighting Rates	1,63,422	1,39,603	1,31,356	58
Theatrical Performances	720	364	555	00

Fees of Court or Office, Payments
for Specific Services and Reim-
bursements in-aid.

Cattle Examination	11,275	7,964	5,519	00
Marriage Registration	1,115	969	2,707	00
Government Stables Receipts	3,199	1,884	485	55
Grain Measures	1,513	1,000	2,032	75
Passports and Permits	15,498	15,247	14,498	02

Rent of Government Property,
Land and Houses.

Market and Shops	80,438	72,432	73,480	29
Slaughter House	8,432	7,092	6,356	00



Zanzibar Protectorate.

REPORT ON THE PEMBA DISTRICT ADMINISTRATION

FOR THE YEAR 1927.

1. *Staff.*—Early in the year Mr. Last was in charge of the island as Acting District Commissioner; I took over from him on April 19th.

A few changes among the Assistant District Commissioners have taken place. Details of these will be found in the reports for the sub-districts as also the transfers among the Subordinate staff.

2. *Inspections.*—His Highness the Sultan visited Pemba Island from September 19th to the evening of September 21st. His Excellency the British Resident accompanied His Highness.

Barazas were held at the three principal stations. Crowds flocked in from many parts to see His Highness. Inspections were made of all roads and the principal public buildings.

From all sides expressions of pleasure and satisfaction have been made at the visit of His Highness. The people are much stimulated by the very vivid interest taken by His Highness in the welfare of his people in this island.

His Excellency visited Pemba in February and July.

Mr. Bottomley, Assistant Secretary in the Colonial Office, made a tour of inspection in January, accompanied by the Chief Secretary.

His Honour the Chief Justice held the High Court Sessions in May and November at Weti, Puisne Judge holding Sessions at Chake Chake in February and August.

Mr. Oldrieve, Secretary of the British Empire Leper Relief Association, visited Pemba and the Leper Settlement at Funzi.

Nearly all heads of Departments have visited the island during the year.

3. *General.*—In 1925 and 1926 many improvements had been made for the benefit of the public. In 1927, however, these improvements have taken a more concrete form. Roads, such as Mkoani-Kengeja, were completed. Weti to Chake Chake was made possible in all weathers; improvements continued on the Matangatwani Section. These alone were advantages never dreamt of five years ago.

The lighterage system and the inauguration of the Pemba Clove Growers Association are also steps that give assistance to the public at large.

The trade returns show a very high export, amounting to nearly one million pounds.

The number of motor cars has increased. In 1926 there were 29 motor vehicles. On December 31st, 1927, there were 44 cars, seven lorries and nine motor bicycles.

The clove crop has been a very large one. A further indication of the prosperity of the island is evidenced by the schemes the richer Indians wish to undertake. An ice and soda-water factory has been erected at Chake Chake at a cost of 50,000 to 60,000 rupees. Enquiries to a similar end are on foot in Weti. A private electric light installation has also been considered. In fact a more independent and wealthier class now live in Pemba, who are willing to invest their money in progressive undertakings.

The appointment of a Roads Board for Pemba, which included an Arab and an Indian member, has given considerable satisfaction.

Legislation that has most closely affected Pemba is the Public Roads Decree which alters the method of compensation for trees and quarrying, and the Agricultural Produce (Adulteration) Decree which has been rigorously enforced.

Weti District is prominent as the largest exporter and importer in the island, this northern port, with its accessible harbour and town well situated for distribution and collection of goods, is likely to develop fast in the future.

4. *District Administration*.—The Maakida and Masheha have, on the whole, carried out their work in a satisfactory manner.

Sheikh Amur bin Sultan, the Akida of Mkoani, died in August. He had served the Government for many years and is a great loss.

Among the Masheha two old retainers have died, Ali bin Hassan of Daya an old and influential servant, and Dadi bin Musa, the Sheha of Kwale Gongo.

The Maakida and Masheha are well in touch with the Assistant District Commissioners. The improvements in the salaries have done a good deal to impress upon them that their posts are more than nominal.

The District Courts have increased their number of cases by 50 per cent; they are likely to develop further, though slowly.

Among the Akidas I would particularly mention the names of Sheikh Abdulla bin Mbaruk el-Mauli and Sheikh Kassim bin Juma el-Riyami. The former has great experience and knowledge, and is very influential; the latter, a much younger man, is developing into a most efficient and valuable public servant in every way.

5. *Agriculture*.—The island depends on its agriculture for prosperity. In the past, the clove, its chief product, has been able to command a good and even a high price. The plantation owner has therefore been in a position to offer a very high wage.

During the last year or two clove prices have fallen to 13, 12 and even 11 rupees a frasila.

Labour, never sufficient to meet the demand, has been able to ask the same wages as formerly. It has been particularly strengthened in its effort, as the plantation owner, fearing he may not get his crop harvested, is ready to offer almost any price and bids against his fellow plantation owners for the pickers' services. As much as 16 pice a pishi has been offered near the end of the season, at this figure the cost of picking a frasila of cloves amounts to Rs. 7½ alone. It is obvious, therefore, that when the local price is only Rs. 8 to 9 per frasila (which is price less 25 per cent duty) it is impossible for the plantation owner to realize any profit.

This state of affairs became very serious during 1926-1927 crop, and it was obvious that another season or two of these conditions would land practically every clove owner in bankruptcy.

The root of the difficulty was the price of labour, and the only method of controlling wages was for the owners to combine in some form.

To this end a Clove Growers Association was formed in Pemba.

The island was divided into 25 areas, a president and committee being elected for each. The central committee consisted of myself as president and the presidents of the area formations as members.

The first meeting was held in August, and by general assent a price of five pice a pishi for picking cloves was decided on. Other meetings were held later, but this figure was maintained throughout the harvest.

Considering the Association was an entirely new departure and introduced a system diametrically opposed to the former way of dealing with labour, I consider all the members of the Association are to be congratulated.

The growers combined with most unexpected unanimity. They discovered that combination gave them power to control the price of labour, and, above all, the plantation owner was able to obtain from his crop a genuine profit. The net profit has amounted to Rs. 4 per frasila as a minimum and where care was used as much as Rs. 5½ net profit went into his pocket.

If the new power the growers hold is used judiciously, there seems no reason why the advantages should not be retained.

The organization of this scheme devolved on the Administration. Much explanation was necessary to enlighten presidents and members of the objects of the Association. At the principal meeting many

unsound proposals were put forward which would have endangered the whole scheme in its infancy. Careful consideration, arguments and weighing-up of the probable results, together with the common sense of the presidents, allowed the final decision to be the correct one, with the present successful result.

I would like here to mention the very valuable co-operation given by the Agricultural Officers, Mr. Waterland and Mr. Baker, in the above scheme.

Further assistance to the clove grower was offered in the form of sales through the Government. This has to some extent been made use of. Those who have availed themselves of the scheme have obtained a price of half to one rupee per frasila more than by selling their cloves locally. These advantages are likely to be used more freely another season.

Free storage of cloves is offered by Government at all the three ports, it is fully made use of at Weti; in fact space is not available to accept all requests. The Wesha godown, I regret, is not used. Mkoani shed was little used in 1926, but this year the Assistant District Commissioner and myself have repeatedly brought to the notice of the public the advantages and uses of the godown; the result has been that demands for storage have been made and a fair proportion of the shed has been in use.

The island produced a good crop in the south during the fall of the year. The crop in the north was heavy in January and February; the estimate of five lakhs for 1927-28 should be realized.

The weather was unsatisfactory for harvesting, unusually heavy rains were experienced in October, November and December and the drying was carried out under the greatest difficulties. The rainfall at Weti and Mkoani (Fufunī) was heavy and spread over a long period.

The Agricultural Produce (Adulteration) Decree was rigorously enforced, the standard of cloves was not only maintained but improved.

The Administration have given considerable clerical assistance to the Agricultural Department during bonus payments and for loan advances; this was done to expedite the distribution.

A small agricultural show at Weti in September was of considerable interest, and is capable of expansion another year.

Appendix G gives shambas registered and amounts paid as bonus.

6. *Public Works*.—The road system in Pemba has been extended considerably during 1927. Kengeja and Mkoani are now connected by a metalled road. Chake Chake can be reached from Weti at all times, half the road being metalled. It is also possible for cars to reach Msuka, the most northern village in the island, in the dry season. The bye-pass road in Chake Chake will be a real improvement to that town.

In 1926 road construction had conferred a great benefit on the people; the improvements and extensions this year have very greatly extended those benefits.

Other works carried out by the Public Works Department have been two bridges on the Limbani section, a drainage scheme at Chake Chake and Mkoani, two blocks of clerks' quarters and a 30,000 gallon tank at Mkoani, a market at Kengeja and the completion of the new Court at Weti. Funzi Island I have referred to elsewhere and to the improvements carried out by the Public Works Department at that place.

Labour.—The three main occupations of the hired labourer are clove picking, weeding and public works. The supply for the former, as usual, does not suffice to meet the demand; on the whole, however, few complaints were made. The mainlanders chiefly supply the latter two services. Generally, the supply has been satisfactory. The general standard of wages has been lowered by about 25 per cent.

7. *Police.*—Appendix A enumerates the police force in Pemba. The only increase in staff is two men at the Weti Station.

The force as a whole has improved considerably. Roads have done much to this end, for inspections can be made more easily and more frequently and concentration of the men can be carried out quickly. The Assistant Inspectors have also improved; the considerable interest taken by the Assistant District Commissioners in their units has also made itself felt.

The inspections by the regular officers of the police from Zanzibar are few and these generally last but a day or two and at most rarely more than ten days. The onus of maintaining good discipline and efficiency in the force falls, therefore, on the Assistant District Commissioners, who are deserving of considerable credit for the improvements.

The crime statistics are given in Appendix C. The increase in cases over 1926 is 289. A few serious cases were detected, but on the whole crime was of a minor character. The activities and watchfulness of the police have no doubt accounted for the larger return of detected crimes.

A small range has been made at Chake Chake, and for the first time the Pemba police were put through their musketry in this island.

Prisons have been regularly visited, and the discipline has been generally good.

8. *Education.*—Government Schools are in existence at Weti, Chake Chake, Matangatwani and Kengeja. The advantages the schools can give are not as eagerly sought after as they should be. There is, however, no doubt that a considerable improvement in this direction is slowly taking place. The average attendance at the various schools is better.

9. *Medical and Sanitary Services.*—There is no outstanding factor under this head, but in more than one direction considerable

progress can be observed in the facilities the public receive for treatment and general improvement in the sanitary condition of the main townships.

No infectious diseases of any importance have broken out, though a somewhat severe influenza epidemic, starting at Mkoani, spread over the island towards the end of the year. Appendix B gives the figures of patients attending hospitals and dispensaries. The figures of the latter, I consider, are highly satisfactory. The out-patients numbered 35,841 as compared with 48,945.

The permanent benefits that dispensaries can offer may be small, but there can be no question that much pain is relieved. I have seen myself a case of severe ulceration of the breast being treated by a dispenser and finally came before the Medical Officer. This, as many another, would not have come to light had the dispensary not existed. If nothing else, they are a medium of introducing to the people in general the benefit of medicine and proper treatment.

The sanitary services have been very active. Drainage at Chake Chake and Mkoani have done much to improve the condition in those places. The streets in the former have been laid with concrete slabs, which have assisted also in the general cleanliness. These measures, together with the watchful supervision of mosquito breeding places, have done much for those living in the towns.

Funzi Island Leper Settlement has been much improved. The house on the southern bluff for the use of the European sister-in-charge has been completed. Extensive drainage and several tanks have been erected and a well dug to supply the sister's house.

The small leper settlement of Nduni, in the Weti district, was evacuated in March and April and the patients transferred to Funzi Island.

The greatly improved condition of the lepers at the present time has made them a far more contented people than formerly; to such an extent is this so that some who have been offered their freedom have been unwilling to accept.

The total number of lepers on the island on December 31st, 1927, was 128. During the year 21 were admitted and 14 died.

9. *Judicial*.—The work in the Pemba Courts has been heavier than in any previous years. Appendix C shows the cases tried in all Courts. The civil cases amount to 5,555, which exceeds the number for 1926 by 800. Criminal cases, similarly, exceed the previous year by nearly 300.

The total revenue for 1927 from the Courts amount to 48,162 rupees, being an increase over 1926 of some 8,000 rupees.

The District Commissioner and the Assistant District Commissioners, who carry out the functions of magistrates, have had to deal with the greater portion of cases, the Kathis dealing with smaller causes and matters which are connected with Mohammedan Law or native usage. The greater proportion of cases have been filed in the

2nd and 3rd Class Courts, to which the Assistant District Commissioners' jurisdiction extends; it is therefore on them that the increase of work has generally fallen.

Pending cases are few, which is a distinct improvement on last year. All cases have been dealt with expeditiously due to the energies of the Assistant District Commissioners.

10. *Customs*.—Appendix D of this report gives the total exports and imports for 1927 and preceding years. Appendix E shows the two chief articles of export, namely, cloves and copra.

The calculations in values for the last two years have been made at the rate of Rs. 13½ to £1. The values prior to 1926 will therefore appear at a lower rate generally to those of 1926 and 1927.

The export of cloves amounted to 663,634 frasilas valued at £477,247. The movements of this crop took place in the early part of the year from Weti area and in the later part of the year from Mkoani District. The price of the article fell gradually during this period. The export of the product is the heaviest recorded.

The copra export trade has fallen by £26,000. The Weti district, which is the largest grower and exporter of copra, shows a decrease of over £16,000 of this total. The principal cause of reduction is the large and late clove harvest, there being therefore less nuts picked and a greater percentage stolen owing to owners of coconut shambas being away picking the clove crop themselves.

In spite of the lower value of cloves, the trade of Pemba Island shows a gradual and steady increase. The value of the exports being £550,822 against a total import of £364,658.

The principal imports are rice, sugar, and piece-goods, and the total value of these articles imported into the three ports are shown in Appendix F.

It is of interest to note that the figures for Weti are largely in excess of the other two due to the increase of business houses and importance of Weti itself as a commercial centre.

11. *Port and Marine*.—The regular Government steamer service has been maintained between Zanzibar and Pemba.

As a passenger service it is extensively patronized, the total number of passengers carried for the year amounting to 15,857 arrivals and 16,889 departures from all ports.

As cargo carriers they do not work to their full capacity, and although a considerable increase has taken place the dhow still carries the greater proportion. The following export figures demonstrate the relative position:—

	By Dhow.		By Steamer.	
	1926.	1927.	1926.	1927.
	Frs.	Frs.	Frs.	Frs.
Cloves	239,764	469,976	79,987	152,208
Copra	255,740	195,057	38,602	11,680
Stems	92,236	109,724	2,365	11,523

The dhow can offer advantages that it is difficult for the steamers to compete with. They can enter difficult and shallow creeks, thereby allowing produce to be shipped very near the growing centres. Lack of roads in the past and the great difficulty of land transport has thus established the dhow as a carrier. They are good as a cheap form of transport, but produce often suffers, especially in stormy weather. This latter fact and roads will place the steamer in the stronger position eventually.

The four steel lighters at the three ports have offered considerable facilities. Imports and exports by steamers can be protected from rain and weather and, moreover, handling and carriage can be more expeditiously dealt with.

Lighters have also operated in some of the smaller creeks and ports, those who have made use of them find they gain considerably. The extension of the lighterage scheme will without doubt become more popular in the future. A reduction from seven cents to five cents was made at Weti for handling, considerable saving being effected thereby.

The two motor-boats at Weti have done most valuable service. Some idea of the work required from these can be judged from the distance run. The 40-foot motor-boat has covered no less than 4,857 miles, it has been in use every month during the year, its smallest month's running (February) being 305 miles. The smaller 30-foot motor-boat has covered 2,474 miles. For two months in the year it was out of commission, the total mileage for the two boats for 1927 was therefore 7,331.

A regular service to Funzi Island was maintained two days a week, and this alone accounts for 1,767 miles.

During the erection of buildings on Funzi it was necessary to run the motor-boats several days in the week. In addition to these services, the lighthouse is kept supplied. There are also the services of sea transport for the Agricultural Department and the Administration.

The general working at the ports has improved and the public have been more expeditiously served.

12. *Conclusion.*—In closing my report for the year I should like to express my appreciation of the work of all my Assistant District Commissioners and my subordinate staff. I would further like to record the very valuable assistance I have received from them at all times. Co-operation and good feeling are valuable assets to progress, especially in small communities such as exist in this island. This general good feeling and co-operation was very marked in 1927 in Pemba, and I would particularly thank Mr. Platts, also Mr. Waterland and Mr. Baker.

B. C. JOHNSTONE.

District Commissioner.

Weti, March 14th, 1928.

APPENDIX A.

DISTRIBUTION OF POLICE PEMBA, 1927.

N.C.O's and Men.

District.	Town.	Ous-stations.	Total.
Weti	24	14	39
Chake Chake	32	8	40
Mkoani	15	8	23
	<hr/>	<hr/>	<hr/>
	72	30	102
	<hr/>	<hr/>	<hr/>

Proportion to population: 1 to 859.

(One Asst.-Inspector in each station not included.)

APPENDIX B.

MEDICAL, 1927.

District.	In-patients.	Out-patients.	Repetition Cases.
Weti	... 466	4,268	7,193
Tumbe	... ..	1,908	3,226
Matangatwani	... ..	3,015	3,605
Mzambaraoni	... ..	1,915	7,295
Chake Chake	... 512	8,073	17,526
Stambuli	... ..	1,504	1,658
Ole	... ..	1,632	2,306
Tundaua	... ..	1,833	2,299
Mkoani	... 158	4,878	3,706
Kengeja	... ..	3,395	4,908
Fufuni	... ..	1,941	2,563
Jambangome	... ..	1,479	2,678

APPENDIX C.

Table showing number of cases filed in various Courts and revenue derived therefrom during the year ending 31st December, 1927.

CIVIL				CRIMINAL									
	Other Court cases	Kathi's Court cases	Total	Civil fees		No. of cases	No. of District Court cases	Fees		Fines		Total Revenue	
				Rs.	cts.			Rs.	cts.	Rs.	cts.	Rs.	cts.
Weti	...	1,311	2,160	16,077	00	384	35	107	25	2,047	50	18,231	75
Chake Chake	...	1,067	1,754	12,903	25	215	30	197	50	1,297	00	14,307	75
Mkoani	...	1,043	1,641	14,569	25	177	7	80	00	973	50	15,622	75
Total	...	3,421	5,555	43,549	50	776	72	384	75	4,228	00	48,162	25
Total for 1926	...	2,993	4,711	35,384	00	487	53	435	75	3,027	25	40,372	50

APPENDIX D.

IMPORTS DURING THE YEARS 1922-1927.

(Coastwise freight from Zanzibar to Pemba.)

	1922.	1923.	1924.	1925.	1926.	1927.
	£	£	£	£	£	£
Weti	113,086	123,207	156,588	117,668	159,766	162,450
Chake Chake	81,881	104,604	94,264	103,936	90,869	108,092
Mkoani	124,240	99,897	281,087	128,285	53,266	94,116
Total	319,207	327,708	531,939	349,889	303,901	364,658

EXPORTS DURING THE YEARS 1922-27.

(Coastwise freight from Pemba to Zanzibar.)

	1922.	1923.	1924.	1925.	1926.	1927.
	£	£	£	£	£	£
Weti	130,324	265,619	175,101	159,369	123,617	251,013
Chake Chake	94,210	129,191	92,156	117,379	107,393	124,375
Mkoani	157,859	204,761	198,869	238,042	229,742	175,434
Total	382,393	599,571	466,126	514,790	460,752	550,822

Note:—Calculated @ Rs. 15 per £ as from 1922 to 1925 and Rs. 13½ for 1926 and 1927.

APPENDIX E.

CLOVE EXPORTS DURING THE YEARS 1922-1927.

(Coastwise freight from Pemba to Zanzibar.)

	1922.	1923.	1924.	1925.	1926.	1927.
	£	£	£	£	£	£
Weti	106,334	216,123	139,220	107,882	77,904	216,834
Chake Chake	86,850	114,871	81,645	101,964	88,120	103,612
Mkoani	145,852	173,999	179,160	202,136	205,447	156,781
Total	339,036	504,993	400,025	411,982	371,471	477,247
Frasilas	487,441	495,738	487,531	490,930	412,268	663,634

COPRA EXPORTS DURING THE YEARS 1922-1927.

(Coastwise freight from Pemba to Zanzibar.)

	1922.	1923.	1924.	1925.	1926.	1927.
	£	£	£	£	£	£
Weti	18,173	30,230	34,010	38,081	43,258	26,545
Chake Chake	5,578	5,896	10,330	8,232	17,806	15,490
Mkoani	7,784	14,138	17,960	19,991	21,435	14,497
Total	31,535	50,264	62,300	66,304	82,499	56,532
Frasilas	153,619	185,743	242,068	288,384	298,673	195,083

Note:—Calculated @ Rs. 15 per £ as from 1922 to 1925 and Rs. 13½ for 1926 and 1927.

APPENDIX F.

PRINCIPAL IMPORTS.

	1926.			1927.		
	Rice.	Sugar.	Piece goods.	Rice.	Sugar.	Piece goods.
	£	£	£	£	£	£
Weti	41,709	10,809	16,674	44,980	11,221	21,249
Chake Chake	28,667	6,450	11,988	39,880	6,453	13,725
Mkoani	29,137	5,155	8,116	38,169	8,182	16,613
Total	99,513	22,414	36,778	123,029	25,856	51,587

APPENDIX G.

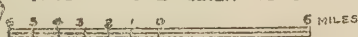
Table showing the number of shambas registered and the amount paid in respect of clove-bonus.

District.	Total Shambas registered.	Clove-Bonus.	
		Rs.	Cts.
Weti	... 7,796	89,085	00
Chake Chake	... 8,410	85,579	00
Mkoani	... 5,106	56,240	00
Total	... 21,312	230,904	00

A MAP OF ZANZIBAR ISLAND

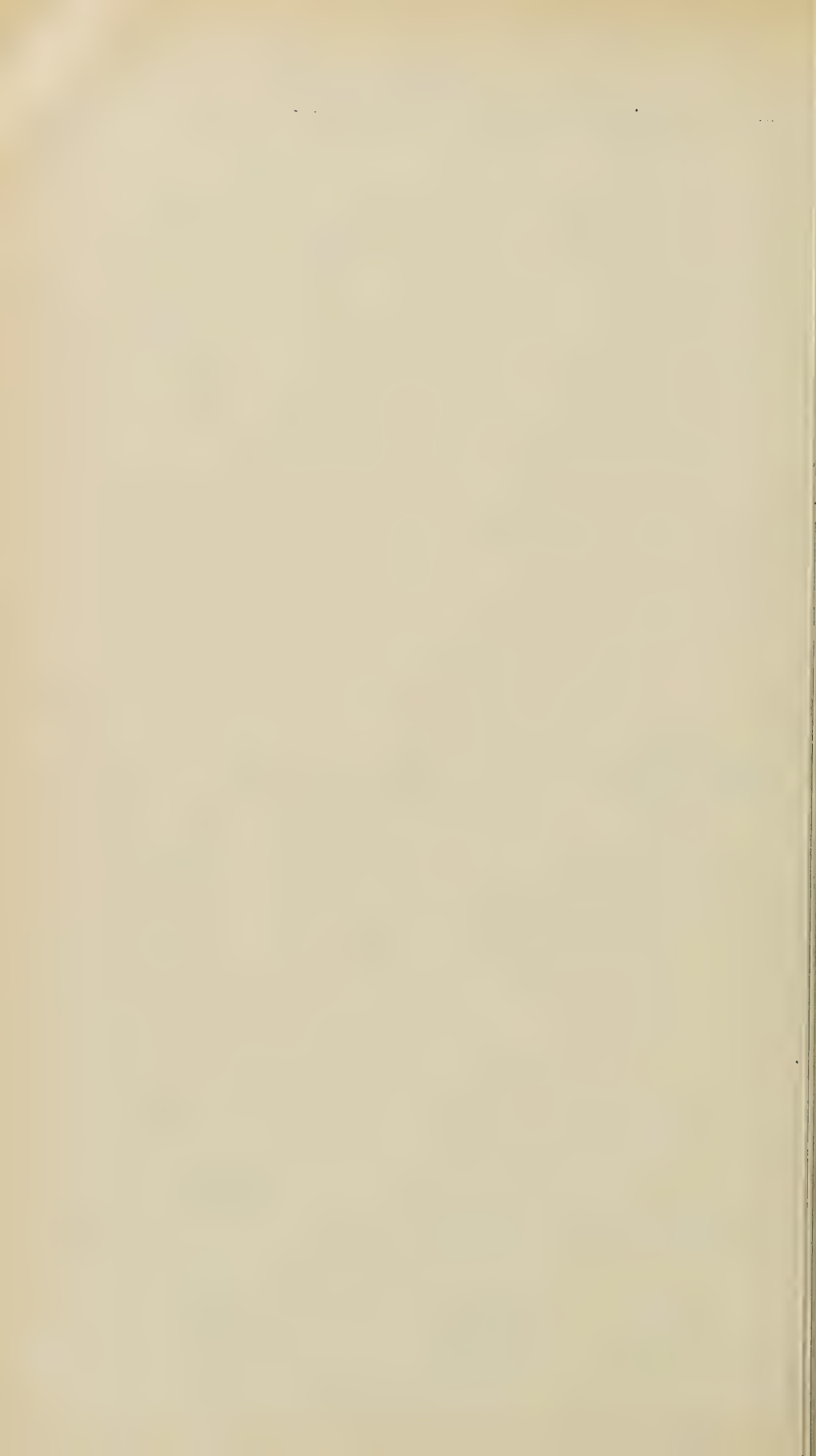
SCALE

1 INCH TO 6 ENGLISH MILES



Hospital	■
Dispensary	●
Proposed	}
Dispensary	





SKETCH MAP OF PEMBA ISLAND



Zanzibar Protectorate.

REPORT ON THE MEDICAL, SANITARY AND BIOLOGICAL DIVISIONS, FOR THE YEAR 1927.

I. ADMINISTRATION.

(a) STAFF.

The establishment for 1927 as sanctioned in the estimates was as follows:—

EUROPEANS.

One Director of Medical and Sanitary Services.
One Deputy Director of Sanitary Services.
One Resident Surgical Officer.
Eight Medical Officers.
One Economic Biologist.
One Sanitary Superintendent.
One Accountant and Store-keeper.
One Sanitary Inspector.
One Matron.
Seven Nurses.
Two Missionary Nursing Sisters, Leper Settlement.

ASIATICS.

One Senior Sanitary Inspector.
Eight Sub-Assistant Surgeons.
Eight Dispensers.
Twenty-nine Sanitary and Mosquito Inspectors.
One Chief Clerk.
Twelve Clerks.
One Senior Laboratory Assistant.
One Engineer Foreman.

NATIVES.

One Dispenser.

Twenty-five Apprentice Dispensers.

Hospital and Dispensary Attendants.

Infectious Diseases Hospital Attendants.

Vaccinators.

Menial Staff.

(b) LEGISLATION AFFECTING PUBLIC HEALTH ENACTED
DURING THE YEAR.

Quarantine Decree, 1927.—This Decree was enacted to bring the law relating to Quarantine up-to-date in the light of the Provision of the Internal Sanitary Convention, 1926, to which this Protectorate is a party.

The imposition and control of quarantine has hitherto been governed by certain rules included in the Zanzibar Port Rules, 1922. This latter decree has now been revised and re-enacted in a different form.

Druggist's and Dangerous Drugs Decrees, 1927.—These two decrees came into force on July 1st, 1927. The Druggist's Decree limited the sales of drugs, other than patent medicines and herbal remedies, and the dispensing and compounding of drugs to those who were registered druggists under the decree, while the Dangerous Drugs Decree brought the existing legislation into line with the requirements of the League of Nations with regard to the limitation of sales of preparations of Opium, Cocaine and Cannabis Indica.

All those who applied for Registration under these decrees were visited by a Government Medical Officer who reported to the Registering Committee who rejected or sanctioned the application.

The applicants were divisible into three types:

(a) Those who were dispensers and compounders in the accepted meaning of the terms and whose livelihood was entirely derived from the compounding and selling of drugs, etc. These were granted full registration.

(b) Those who were dealing in certain drugs which brought in a great portion of their income and which were really not harmful or dangerous. These people were granted registration on the grounds that their livelihood would be taken away if they could not carry on their business of dispensing.

(c) Those who could not be licensed or registered under any consideration.

There were registered and licensed during the year twenty-two fully qualified Dispensers and Druggists—these included Government Dispensers.

During the year one candidate presented himself for examination as a Druggist, the examination being conducted by a Government Medical Officer and one of the private druggists of the town. The examiners were satisfied, and the candidate registered.

There was a considerable amount of Poppy Capsules and Drugs in the possession of unregistered people when these Decrees came into force. The Poppy Capsules were taken over by the Government and arrangements are being made for a similar disposition of the drugs.

From time to time during the year druggists were visited by a Government Medical Officer who checks their records of sales of poisons and dangerous drugs and assists in the elucidation of any difficulties that have presented themselves.

(c) FINANCIAL.

(Vide Table II for further details.)

Revenue.

	£
Hospital fees, sale of drugs, etc.	972
Contribution from other dependencies towards	
Quarantine services	2,637
	<hr/>
	3,609

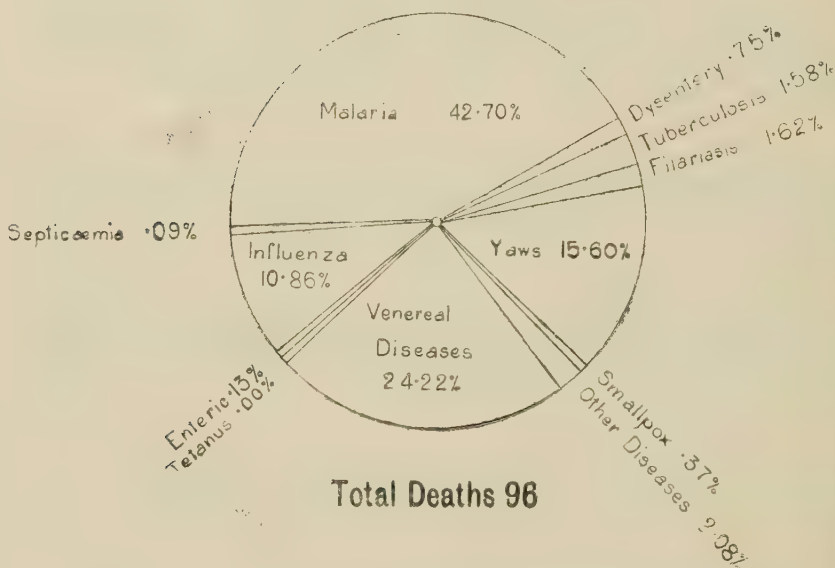
Expenditure.

Personal Emoluments	36,951
Other Charges	11,259
Special Expenditure	345

Deducting the contribution from other dependencies towards the maintenance of the quarantine service, the total expenditure on Medical and Sanitary Services was £47,719 being 8.83 per cent of £540,345, the actual revenue of the Protectorate for the year.

Diagram showing the Proportion of the different Epidemic, Endemic and Infectious Diseases (with deaths) under each Group Treated at Hospitals and Dispensaries.

Total Cases 13,376



Total Deaths 96

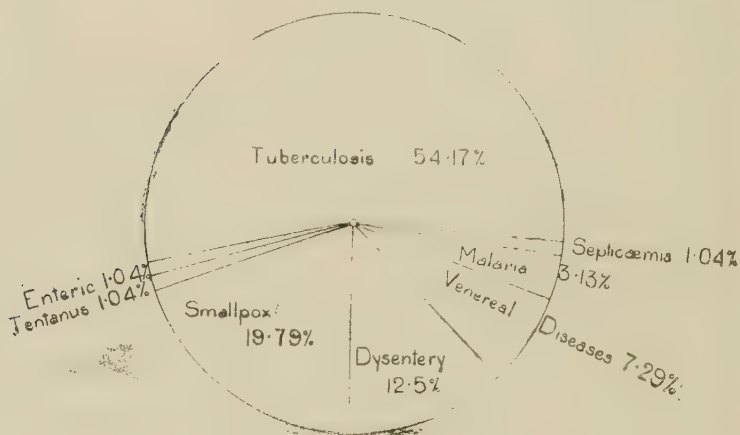
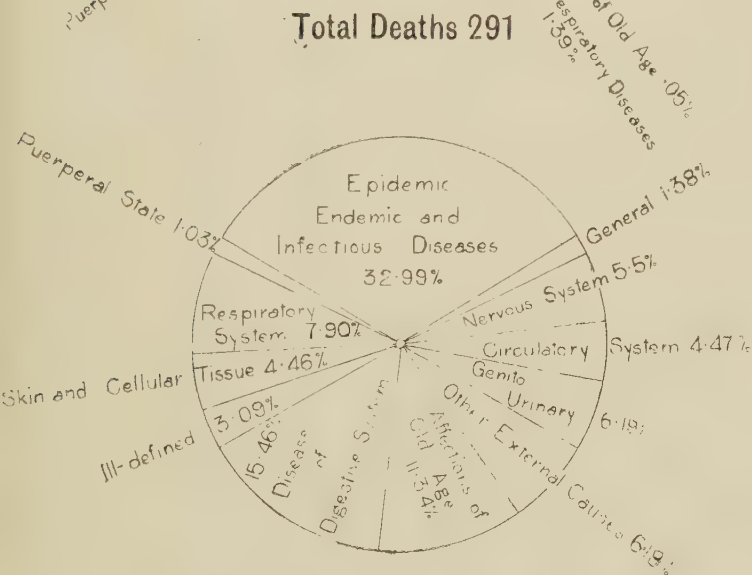
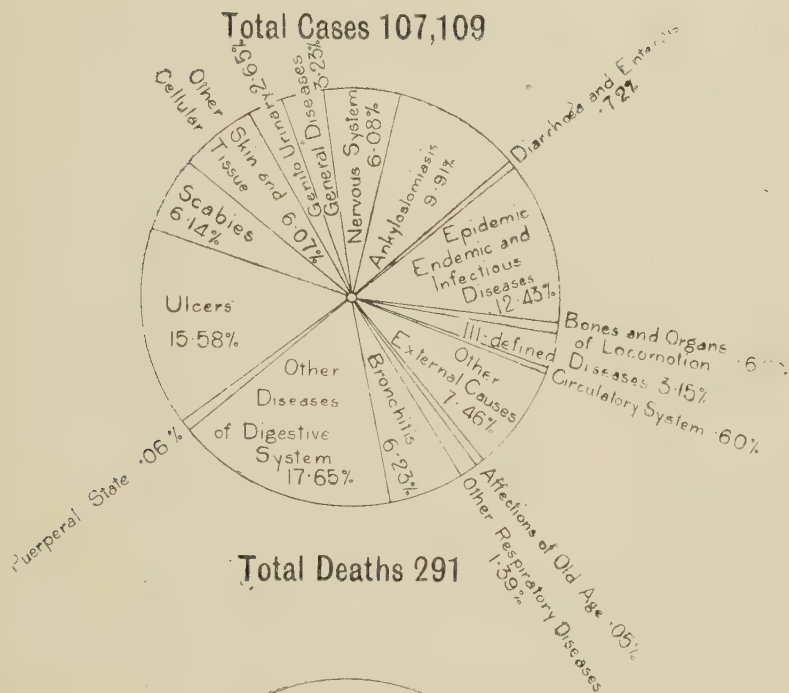
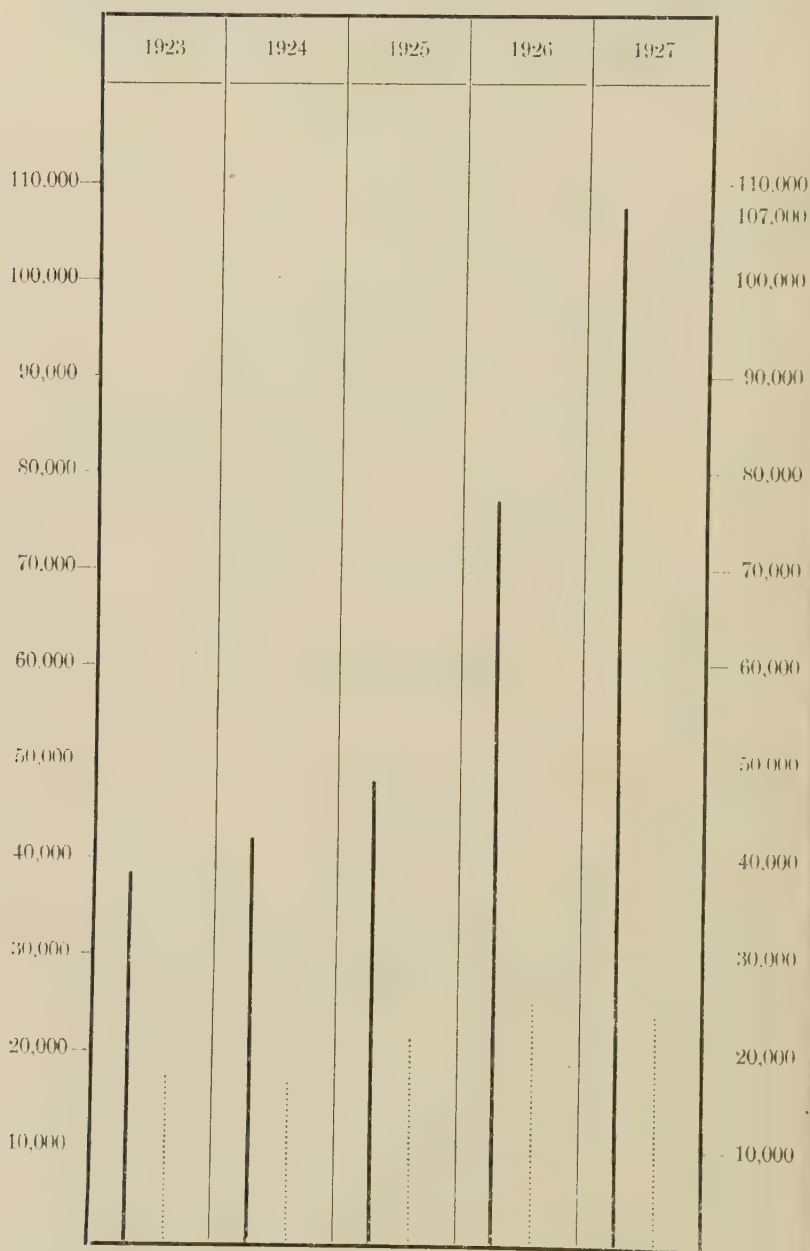


Diagram showing the Proportion of the different Diseases (with deaths) under each Group Treated at Hospitals and Dispensaries.



Comparative chart of cases treated and expenditure during the last five years:—



Cases Treated———

Expenditure.....(in pounds).

Expenditure includes personal emoluments of the Director of Medical and Sanitary Services and the Medical staff, excluding sanitation, biological and veterinary divisions.

The treatment of lepers and expenses in connection with Leper Settlements are not included.

II. PUBLIC HEALTH.

(a) GENERAL REMARKS.

With the exception of the prevalence of small-pox throughout the year, the Public Health of the Protectorate was satisfactory as compared to previous years. As mentioned in last year's report, two groups have to be considered, representing two schools of thought, ancient and modern. Naturally amongst the first group there is much preventible illness and suffering and many avoidable deaths. The second group too, although much healthier and far more amenable to advice and instruction on health and disease prevention, still pay toll to unsatisfactory surroundings, poor housing, ignorance of elementary hygienic laws, ill-balanced diet and the general handicaps of primitive peoples inhabiting tropical countries. But the gradual spread of education throughout the island which is being brought about by the increasing number of excellent schools in the districts, the realisation of the benefits of western medicine and the efficiency of treatment for most tropical complaints, which is similarly being impressed on the people by the opening of the district dispensaries and last but not least the educative influence of the local school master and local dispenser in the different villages formerly untouched by progressive ideas, must inevitably, if perhaps slowly, lead to a general improvement in the ideas and standard of living of the people, and a gradually increasing conviction that disease is not inevitable and irremediable or only to be treated by witchcraft and spells but that it is largely preventible by the exercise of cleanliness, care, and common sense, and that prompt treatment of any individual case of illness is urgent and necessary.

One of the most favourable auguries for the improvement of public health are the excellent arrangements made for games, especially football and cricket, for the natives of Zanzibar and the keenness and the enthusiasm of both players and spectators, and a tribute must be paid to those responsible for this satisfactory state of affairs. A steady, if gradual progress in the standard of public health, may therefore be confidently looked forward to in the future. But undue optimism must be guarded against. Natives of a tropical country have many and varied parasites to contend with. Their past traditions are those of apathy and indifference and these can only be gradually overcome. Nothing dramatic can therefore be expected, but rather a gradual improvement spread over the course of years.

The following table shows the total number of cases in each group of diseases treated at all Government Hospitals and Dispensaries during the year, and the percentage of the number of cases in each group to the total number of cases treated. That the natives of the Protectorate are demanding medical treatment in ever increasing numbers is shown by the noteworthy advance in the number of cases,

the total being 107,189 compared to 76,585 in 1926, and 48,963 in 1925, the total thus being doubled in the last three years.

Group.	Cases.	Percentage to total number of cases treated.
I Epidemic, Endemic and Infectious Diseases ...	13,323	12.43
II General Diseases not included above ...	3,464	3.23
III Affections of the Nervous System and Organs of Senses ...	6,518	6.08
IV Affections of the Circulatory System ...	643	0.60
V Affections of the Respiratory System ...	8,165	7.62
VI Diseases of the Digestive System ...	30,299	28.27
VII Diseases of the Genito-Urinary System (Non-Venereal) ...	2,839	2.65
VIII Puerperal State ...	63	0.06
IX Affections of the Skin and Cellular Tissues ...	30,427	28.39
X Diseases of the Bones and Organs of Locomotion (other than Tuberculosis) ...	3	0.00
XI Diseases of Infancy ...	4	0.00
XII Affections of Old Age ...	56	0.05
XIII Affections produced by External Causes ...	7,999	7.46
XIV Ill-Defined Diseases ...	3,384	3.16
	107,189	100.00

1. GENERAL DISEASES.

General Diseases.—The number of diseases recorded under this heading is 3,464 as compared with 1,798 last year. Chronic Rheumatism again shows a marked preponderance. This was commented on in last year's report and the heading would appear to cover various aches and pains derived from innumerable causes, such as gonorrhœa, yaws, filariasis, helminthiasis, muscular rheumatism and numerous other diseases. Rheumatism of the joints with crippling of movement and deformity is very rare, and acute rheumatism or rheumatic fever is unknown. Anæmia as mentioned in last year's report is secondary to various protozoal or helminthic infections, primary anæmia being unknown. Cancer is reported in eight cases as compared to five last year. Eight out of over one hundred thousand is a very small percentage, but it is undoubtedly that cancer does occur in natives if only to a small extent.

Affections of the Nervous System and Organs of the Senses.—The great majority of the cases under these headings are trivial, headaches, neuralgias, and the remarks above on chronic rheumatism equally apply to them. Of more serious conditions 117 cases of paralysis are reported as compared with 61 last year. Conjunctivitis is again the commonest eye disease and is undoubtedly the consequence of climatic and hygienic conditions.

Affections of the Circulatory System.—Lymphangitis and lymphadenitis, as last year, are the most frequent diseases under this category, and are due to filarial infection.

Affections of the Respiratory System.—The total number of cases in this group was 8,165 as compared with 6,111 last year.

Totals of the more important respiratory diseases for the last three years are as follows:—

		1925.	1926.	1927.
Pneumonia	...	77	195	175
Pleurisy	...	42	36	114
Bronchitis	...	3,688	4,945	6,736
Broncho-pneumonia	...	78	27	76
Laryngitis	...	13	47	59

Diseases of the Digestive System.—These diseases numbering 30,299 as compared to 22,717 last year represented over 28% of the total number of cases treated during the year. This number is largely made up of minor digestive troubles such as constipation, dyspepsia, diarrhœa and ankylostomiasis cases. Cases of hernia number 397 as compared to 304 last year. Of these 28 were strangulated necessitating immediate operation.

Diseases of the Genito-Urinary System (Non-Veneral).—These are largely of filarial origin, but it should be noted that 600 cases of Schistosomiasis are recorded during the year as against 420 last year.

Affections of the Skin and Cellular Tissues.—The total number of cases is 30,427 as compared to 20,535 last year and represent about 28% of the total diseases. The vast majority of these cases are ulcers and the great increase is due to the larger numbers treated in the District Dispensaries, which are the means of bringing relief to many suffering from this trying condition, who would otherwise have received no medical assistance with consequent indefinitely continued pain and disability.

It should be noted that the term Scabies is frequently used throughout this Report.

But from investigations now being made by one of the Medical Officers, it appears very doubtful if this condition which has all the appearance of this disease is true Scabies, as in none of the cases so far carefully examined has the *Sarcoptes Scabiei* been isolated.

2. COMMUNICABLE DISEASES.

(a) Mosquito and Insect Borne.

Malaria.—The total number of cases treated was 5,714 as compared with 4,808 in the previous year. The number examined microscopically will be found in the Laboratory Report.

The percentage of cases of malaria to all cases treated for the last three years is shown below:—

1925.	1926.	1927.
6.75	6.27	5.33

Of the European population in Zanzibar, in 32 cases malarial parasites were found in the blood. An analysis of these cases reveals the fact that by far the greater proportion undoubtedly contracted the disease outside the town proper. The greatest incidence occurred after the rains.

Blackwater Fever.—There were three cases with no deaths as compared to nine cases with no deaths in 1926.

Particulars of the cases as follows:—

Sex:—All males.

Ages:—50, 28, 29.

Nationalities:—Hindoos 2, Goan 1.

Occupation:—Jailer, Blacksmith, and Clerk, all in Government employ.

Locality:—One in Zanzibar and two in Pemba.

Period of Residence:—(1) Jailer, many years, (2) Blacksmith, 8 months, (3) Clerk, 10 years.

Previous attacks of malaria:—(1) Many, (2) Six attacks, (3) Many.

Previous attacks of Blackwater:—(2) and (3) nil. The Jailer has had five previous attacks, the last being recorded last year. He would appear to be of the type, who on malarial infection, readily breaks down to blackwater.

Quinine:—Irregular, in all cases.

Cause of attack:—Insufficient quinine, irregularly taken.

Seasonal Incidence:—January, May, July, i.e., the months following the rain.

Dengue.—No case was recorded during the year.

*Filaria*s.—The number of cases shown in the returns is 217 as compared with 102 last year. As mentioned in last year's Report this affords no indication of the wide spread nature of the disease, nor the suffering it inflicts.

Elephantiasis is an extremely common sight in the streets and must remain so until the culex problem is successfully overcome.

(b) *Infectious Diseases.*

The following table shows the number of cases with deaths of the more important infectious diseases treated during 1927, and the previous years:—

	1925.		1926.		1927.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Enteric Group	3	—	8	1	17	1
Small-pox	3	—	53	15	50	19
Whooping Cough	167	—	52	1	64	—
Influenza	359	—	847	—	1,453	—
Mumps	19	—	17	—	117	—
Dysentery	74	3	93	1	100	12
Leprosy	14	—	37	—	26	—
Chicken-pox	5	—	32	—	38	—
Yaws	492	1	1,066	—	2,086	—
Tetanus	8	2	9	4	1	1
Tuberculosis	130	8	175	9	211	52
Syphilis	250	—	383	—	531	7
Soft Chancre	178	—	356	—	528	—
Gonorrhœa	989	—	1,459	—	2,153	—

(including complications).

Enteric Fever.—Two cases of enteric with no deaths occurred during the year. There was a considerable increase in the number of cases of Para B. Reference is made to this in the Deputy Director of Sanitary Services' Report.

Small-pox.—The epidemic which commenced in the last quarter of the previous year continued particularly in the Southern part of the Island. Particulars are given in the Report of the Deputy Director of Sanitary Services.

Influenza.—Was not prevalent during the year under review.

Dysentery.—Numerous cases are returned under the heading Bacillary Dysentery. It is difficult to classify these cases, but the great majority are probably acute or epidemic diarrhœa.

Tuberculosis.—The number of deaths from this disease during the last five years are as follows:—

1923.	1924.	1925.	1926.	1927.
185	167	132	145	136

The prevention and treatment of tuberculosis has been and always will be a problem, whilst the housing conditions and habits of Africans and Asiatics remain what they are. The question of instituting Sanatorium Treatment is under consideration.

Leprosy.—See Appendix (II).

Yaws.—The establishment of the District Dispensaries has given clear proof that this disease is very prevalent throughout both Islands. Treatment by injections of Bismuth Potassium Sodium Tartrate is both efficacious and popular. The number of injections given during the year was 517.

Venereal Diseases.—Gonorrhœa is commoner in the town than in the Districts. This however is only to be expected in view of the fact that Zanzibar is a busy port. Syphilis occurs with fair frequency but is not, as mentioned in last year's Report, a grave cause of disability.

(c) *Helminthic Diseases.*

The following table shows the number of cases of Helminthic Diseases treated last year as compared with the two previous years:—

	1925.	1926.	1927.
Ankylostomiasis ...	3,747	9,222	10,618
Filariasis ...	109	102	217
Schistosomiasis ...	138	420	600
Ascariasis ...	30	17	77

The question of helminthic diseases is fully dealt with in the Report of the Economic Biologist (IX Scientific) and is therefore not discussed in detail. But attention must be drawn to the wide-spread distribution and considerable incidence of Schistosomiasis as revealed by this report and the work of the District Dispensaries.

(b) VITAL STATISTICS.

The estimated native and Arab population according to the census taken in 1924 was 202,665. But as was pointed out in some detail in last year's Report, there is reason to believe that there has been a diminution in the population since that year.

There is however no evidence to show that any further marked diminution of the native population has occurred during the year. In point of fact the immigration figures for the year under review exceed the emigration by two thousand. As, however these do not include Tanganyika natives, who come and go freely, and are probably made up chiefly of Asiatics, they afford no guide.

The total number of deaths throughout the Protectorate was 4129 as compared with 5017 in 1926 and 4573 in 1925.

The crude death rate per mille for the last three years was therefore (approximately):—

1925.	1926.	1927.
20.6	23.1	20.6

In Zanzibar Town the deaths of Arabs and Africans numbered 825. Taking last year's estimate of the native population 28,500 as unchanged, the death rate per mille for 1927 was 28.8 as compared with 44.3 in 1926 and 36.7 in 1925.

This is a decided diminution, and making due allowances for a considerable margin of error, there would appear to be no doubt that the health of the native population in the town was considerably better than in 1926. This is also borne out by the fact that the total number of native deaths was 450 less than in the previous year.

Attention is again drawn to the relatively small number of Africans (105) who were attended in their last illness by a Medical Practitioner, and the remarks there anent in last year's Report endorsed.

No remarks are submitted on the Birth Rate. Investigations carried out during the year by the Administration definitely proved that the native population were not registering births as they should do. In future years it is hoped that a fair degree of accuracy may be arrived at, and thus important facts as regard infantile mortality brought to light.

(2) GENERAL EUROPEAN POPULATION.

Two Europeans died in the Protectorate during the year, one of French and one of German nationality. In both cases the patient was landed from a passing ship, French and German respectively, in a moribund condition. The Frenchman came from Madagascar and his death was due to Cirrhosis of liver. The German came from Tanganyika and the cause of death was certified as Myocarditis following acute malaria.

The total number of non-official Europeans treated at Government Hospitals and Dispensaries was 257, the most important illnesses being:—

Malaria	22	Dysentery	3
Influenza	28	Pneumonia	2

Eight births occurred during the year.

(3) EUROPEAN OFFICIALS.

The health of the European officials was satisfactory. During the year 317 cases of illness were recorded and 91 placed off duty. The figures for 1926 were 222 and 140, and for 1925 180 and 78 respectively.

The principal causes of illness were:—

Paratyphoid B.	2	Tuberculosis	1
Malaria	17	Heart Disease	1
Influenza	36	Respiratory Diseases	24
Injuries	26		

Medical Boards were held on three officials during the year and one of these was invalided on account of Pulmonary Tuberculosis.

Table showing the Sick, Invalidings and Death rates of European officials.

	1925	1926	1927
Total number of Officials resident	128	128	112
Average number resident	84.5	99.98	99.25
Total number on sick list	78	140	91
Total number of days on sick list	467	516	553
Average daily number on sick list	1.28	1.41	1.51
Percentage of sick to average number resident	1.51	1.40	0.91
Average number of days on sick list for each patient	5.99	3.69	6.09
Average sick time to each resident	5.52	5.16	5.58
Total number invalided	5.00	2.00	3.00
Percentage of invalidings to total residents	6.40	1.57	2.68
Total deaths	0.00	0.00	0.00
Percentage of deaths to total residents	0.00	0.00	0.00
Percentage of deaths to total average number resident	0.00	0.00	0.00

(4) NON-EUROPEAN OFFICIALS.

Under this heading are included all non-European officials (Asiaties and Africans) down to and including Grade IV. In all 1,045 cases of illness were recorded, for 616 of which the officials were placed off duty and 101 admitted to hospital.

The principal causes of illness were:—

Paratyphoid	3	Respiratory Diseases	129
Malaria	303	Digestive Diseases	129
Blackwater Fever	3	Skin Diseases	103
Influenza	106	External Injuries	26
Dysentery	6	Undefined Fever	56

Deaths:—No deaths occurred during the year.

Medical Boards:—Eight medical boards were held resulting in the permanent invaliding of five officials, for Chronic Synovitis 1, Heart Disease 1, Blackwater Fever 1, Tuberculosis 1, and General Debility 1.

Table showing the Sick, Invalidings and Death rates of non-European officials for 1927:—

	1926	1927
Total number of officials resident	574	516
Average number resident	497.22	491.67
Total number on sick list	569	445
Total number of days on sick list	3,384	2,495
Average daily number on sick list	9.27	6.87
Percentage of sick to average number resident	1.15	0.90
Average number of days on sick list for each patient	5.95	5.61
Average sick time to each resident	6.80	5.09
Total number invalided	6.00	6.00
Percentage of invalidings to total residents	1.05	1.16
Total deaths	3.00	2.00
Percentage of deaths to total residents	0.52	0.39
Percentage of deaths to total average number resident	0.60	0.40

(5) POLICE.

The total number of non-commissioned officers and men in the Police in 1927 was 537.

Five deaths occurred during the year and eighteen of the Force were discharged as medically unfit, in four of these the cause of invaliding was pulmonary tuberculosis.

Ziwani Police Lines.—The average number of the Force residing in Ziwani Police Lines was 376 and 2,107 cases of illness were treated. The number admitted to hospital was 259 and among these five deaths occurred, one from ascending paralysis, one from locomotor ataxia, one from broncho-pneumonia, one from pulmonary tuberculosis and one from valvular disease of the heart.

The principal causes of illness were malaria, constipation local injuries, ulcers, diseases of the digestive and respiratory systems, and ankylostomiasis.

The average number of women resident in the Lines was 133 and of children 111. The deaths of one woman and one child occurred during the year.

Weti Police Lines.—The average number resident was 40, and 155 cases of illness were treated.

Chake Chake Police Lines.—The average number resident was 40, and 165 cases of illness were treated.

Mkoani Police Lines.—The average number resident was 23, and 104 cases of illness were treated.

III. HYGIENE AND SANITATION.

REPORT BY THE DEPUTY DIRECTOR OF SANITARY SERVICES.

(A) GENERAL REVIEW OF WORK DONE AND PROGRESS MADE.

The personnel of the Public Health Service remained the same as during 1926.

The small-pox epidemic which began towards the end of last year continued throughout the greater part of 1927 and did not cease finally until October.

The Sanitation of Pemba was under the supervision of the Medical Officers and Sub-Assistant Surgeons assisted by two Asiatic Sanitary Inspectors. The Medical Officers were also responsible for veterinary work, including meat inspection, control of slaughter house, and cattle quarantine.

The work done during the year is shown in detail under the appropriate headings in the following pages.

I. PREVENTIVE MEASURES.

Mosquito and Insect-Borne Diseases.

The transfer, as mentioned in the 1926 report, of the anti-mosquito work from the Biological to the Sanitation Division has resulted in economy of working and has, it is hoped, at least maintained the high degree of efficiency that it had attained under its originator's control.

Among some practical improvements in the detail of this work may be mentioned the substitution of oil sprayers for ladles in the application of oil to the town cesspools. This method has the following advantages over the ladle method:—

- (a) Increase in number of cesspools oiled in a given time.
- (b) Better application of oil.
- (c) Economy in the amount of oil used for each cesspool treated.

The inspection and treatment of boats and lighters continued to be carried out through the courtesy of the owners, but it is hoped that legislation will be introduced next year to put this work on a proper footing.

TABLE No. 1.

Comparative table showing collections of mosquito larvæ found in the township:—

	1925.	1926.	1927.
Anopheline	... 13	39	31
Culex	... 78	204	484
Stegomyia	... 1,145	5,365	3,856

TABLE No. 2.

Analysis of breeding places of anopheline found in the township in relation to the months of the year:—

	Temporary pools.	Cement Drains.	Cement Tanks.	Wells	Tins, pots, etc.	Boats	Total
January	...	1	...	...	...	...	1
February	...	...	...	...	2	...	2
March	...	...	...	...	...	...	...
April	...	...	...	...	...	1	1
May	6	1	...	...	...	...	7
June	2	...	1	...	1	...	4
July	...	...	...	...	...	...	...
August	...	...	...	...	...	...	...
September	...	...	...	...	...	...	...
October	...	...	...	...	...	...	...
November	4	...	...	...	...	...	4
December	12	...	...	...	...	...	12

Total breeding places 31

TABLE No. 3.

The following adult mosquitoes were caught in the township:—

	1925.	1926.	1927.
Anophelines	... 182	451	464
Culex	... 2,737	2,342	1,998
Stegomyia	... 180	128	258

TABLE No. 4.

Adult anopheline were found in:—

The Government Prisons	on 9 occasions.
Private houses	„ 8 „
Ziwani Police Lines	„ 6 „
Parsee Temple	„ 4 „
Kisimamajongo Police Station	„ 1 „
Native Hospital	„ 1 „
U.M.C.A. Hospital	„ 1 „

TABLE No. 5.

Sullage and cesspits oiled fortnightly during 1927.

January	1,930
February	2,029
March	2,179
April	2,393
May	2,174
June	2,447
July	2,750
August	2,363
September	2,489
October	2,480
November	1,674
December	2,523

Total 27,431

	1925.	1926.	1927.
No. of notices served	121	150	1,520
No. of prosecutions instituted	...	2	16
No. of convictions obtained	...	2	16

A comparison of Tables 1 and 3 will show that by far the largest number of larvæ found are *Stegomyia* while the largest number of adult mosquitoes found are *Culex*. The explanation of this lies in the fact that breeding places of *Stegomyia* are in domestic vessels while those *Culex* are in cesspools and drains, the age and bad condition of the latter being responsible for innumerable and inaccessible breeding places.

Table 2 illustrates the comparative freedom from anopheline mosquitoes enjoyed by this township, and it was only in the rainy periods of the year that more than two breeding places were found in the same month.

Outside the town, the Prison, Police Lines, and Parsee Temple continue to be the areas where anophelines are found with the greatest frequency. Until some serious effort is made to remove the undergrowth on the neighbouring Government and private land, shelter for breeding places will continue to be afforded, and anophelines will continue to breed in these areas in large numbers.

Anti-Malarial Work.—The canalising of the Saateni Stream carried out in 1926 has proved very satisfactory and this work withstood the heavy rainfall at the end of the year successfully.

The levelling and grading of the Ziواني Swamp has prevented, to a large extent, the retention of water in this area for any length of time; but there has been a little subsidence at one or two points, which should be re-graded.

No funds having been allowed this year for Zanzibar and no maintenance being required, sanction was obtained to utilize money allocated to "Maintenance of Swamps Drainage" for the construction of new work. The total expenditure was Rs. 1,857 and the work consisted chiefly of the completion of the main drainage schemes undertaken last year as enumerated below:—

(1) To drain the rising ground at Kiungani between Kilimani and the sea various small catchment areas were partially filled, graded and drained into the main Ziواني drain by four agricultural drains and two earth drains, the total length of drain constructed being 800 feet.

(2) At Migombani, to drain the hill side below the road and bounded by the agricultural gardens a concrete channel with an agricultural drain extension was constructed draining the area into the concrete channel constructed last year. The total length of each was 300 linear feet and 175 linear feet respectively.

Pemba.—Practically all anti-malarial work with regard to swamp drainage was carried out at Chake Chake.

On the accepted principal of attacking the water table before it reaches the surface, open channel drains of saucer section were laid in the swamp below the European Residential part of the town in 1926, but the time was insufficient to allow of the drains being laid to their fully required lengths. It was agreed that the programme for 1927 should consist of the completion of the 1926 work and this work was accordingly carried out at a cost of Rs. 3,690 and has proved to be satisfactory.

Epidemic Diseases.

Small-pox.—The epidemic which began towards the end of 1926 continued until October, 1927, the last case being found at Mwera. A total of 171 cases were reported of which two were in Pemba.

The following table shows the distribution of the cases reported:—

	No. of Cases.	First Reported.	Last Reported.
Town and Suburbs ..	5	February 19th	April 23rd
Mkokotoni ..	11	January 16th	" 14th
Mwera ..	24	" 1st	October 10th
Chwaka ..	129	July 5th	August 29th
Pemba ..	2	January 20th	January 20th
Total ..	171		

The following table shows the number of cases of small-pox in Zanzibar and Pemba Islands during the last five years:—

		1923		1924		1925		1926		1927	
		Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Zanzibar	..	203	56	10	1	3	..	51	22	169	68
Pemba	..	33	4	..	..	..	..	2	..	2	..
Total	..	236	60	10	1	3	..	53	22	171	68

Forty-one small-pox cases in addition to nine remaining from 1926 were treated during the year at the Infectious Diseases Hospital, there being 19 deaths and no patients remaining on December 31st.

The remarks in last year's report in connection with nursing still hold good.

The following table gives particulars of the above cases:—

(a)	Total number of cases	...	...	50
	Died	...	...	19
	Discharged	...	...	31
	Remaining on December 31st, 1927	...	...	nil

(b)	New cases:			
	Sex:—			
	Males	...	...	26
	Females	...	...	15
				41

(c)	Nationalities:—			
	Swahili	...	...	40
	Arab	...	...	1
				41

(d)	Ages:—			
	1 to 5 years	...	...	3
	16 „ 20 „	...	...	1
	21 „ 30 „	...	...	18
	31 „ 40 „	...	...	13
	41 „ 50 „	...	...	2
	51 „ 55 „	...	...	1
	66 „ 75 „	...	...	2
	81 „ 85 „	...	...	1
				41

TABLE.

The following table shows the number of vaccinations carried out during the year:—

Month.	Town.	Steamers.	Dhows.	Mkoko-toni.	Chwaka.	Weti.	Chake-Chake.	Mkoani.	Total.
January	...	55	694	...	2,038	610	139	423	6,586
February	1,597	20	580	1,552	761	493	94	68	5,165
March	2,315	98	320	240	1,695	340	120	35	5,163
April	1,372	262	141	1,217	...	301	52	60	3,405
May	1,216	137	102	...	82	464	94	38	2,133
June	761	163	88	...	395	514	180	10	2,111
July	265	58	132	...	2,508	342	162	12	3,479
August	322	85	209	...	1,076	214	200	9	2,115
September	817	128	98	291	1,373	155	285	...	3,147
October	1,480	112	102	...	58	203	14	...	1,969
November	850	125	96	...	...	193	30	...	1,294
December	500	133	82	...	...	201	50	...	966
Total ...	14,122	1,376	2,644	3,300	9,986	4,030	1,420	655	37,533

Vaccinations continued to be carried out from house to house in the town, and vaccination stations were established in each district in which cases were found.

Chicken-pox.—Seventeen cases were treated in the Infectious Diseases Hospital. This was apparently a continuation of the 1926 epidemic. No deaths occurred and the schools were not affected.

Other Epidemic Diseases.

Plague.—No cases of plague have occurred in the Protectorate since 1911, but the possibility of an epidemic must not be lost sight of and for this reason an unceasing campaign against rats is waged from year's end to year's end.

Of the rats destroyed daily, at least a dozen are examined bacteriologically for plague. This is not a large proportion, but with the laboratory staff available it is very difficult to find the time to deal with more.

Particulars of numbers of rats destroyed, etc., will be found in Section VII.

Tuberculosis.—This accounts for more deaths (12.5% of the total reported) than any other diseases in the Protectorate. The majority of the cases are to be found in Zanzibar town where over-crowding and lack of ventilation and sunlight afford ideal conditions for the growth and spread of the tubercle bacillus.

Every effort is made by this department to improve housing conditions, but since such efforts clash unavoidably with the financial prospects of the landlords, progress is very slow and encumbered by much writing. But the absence of any specific legislation is, perhaps, the greatest hindrance to progress in our efforts to improve the housing conditions of the Asiatic and African population.

Enteric and Dysentery.—All cases of these diseases are, when diagnosed, isolated in hospital or in their own homes. In the latter cases detailed instructions are issued as to the disposal of excreta and other measures to prevent the spread of the disease. The house in which a case has occurred is disinfected subsequently.

In connection with these diseases it is to be noted that active measures of fly destruction—both larvæ and adults—are carried out continuously.

The water supply also is examined bacteriologically every month and chemically at intervals.

Three cases of Enteric, two of Paratyphosus A and 27 of Paratyphosus B occurred during the year. Particulars and remarks concerning these will be found in Section IX in the report on the Bacteriological Laboratory.

There were 15 cases of dysentery of which 11 were due to *Entamœba histolytica*, 3 to *B. dysenteriae* Flexner and 1 to *B. dysenteriae* Shiga.

Amœbic dysentery is not common, *E. histolytica* being found in only 10.5% of suspected cases and in 0.8% of the total stools examined.

Bacillary dysentery is not, as far as laboratory results go, a common disease here and accounts for only 0.3% of excreta examined.

Of the 17 deaths in Zanzibar town returned as "Dysentery" only one was diagnosed bacteriologically, the remaining 16 being mostly reported by the Health Office Death Inspector who has to rely for his diagnosis on the information gleaned from relatives and friends of the deceased.

Leprosy.—Nearly all these cases are from among the poorest section of the community and are found, almost without exception, in the districts and but rarely in the town.

The cases are brought to the laboratory for examination and if positive, are sent to Funzi Leper Settlement. The individual's property is suitably dealt with to prevent any spread of infection.

Particulars concerning treatment and progress of cases will be found in Appendix II.

Helminthic Diseases.

(a) *Ankylostomiasis.*—This is one of the most prevalent diseases in the Protectorate, over 70% of suspected cases proving positive on microscopical examination.

An important measure of prevention is the use of suitable cement topped latrines, and the provision of these in appropriate places was carried out during the year.

(b) *Schistosomiasis.*—This disease is much more prevalent than was realized before the Economic Biologist conducted an investigation into its etiology and extent. His report will be found in Section IX.

The only other common helminthic infection is Ascariasis which accounts for 4.3% of the stools examined in the laboratory.

GENERAL MEASURES OF SANITATION, ZANZIBAR.

(a) *Sewage Disposal and Drainage*.—This remains the same as previously. The replacement of old type square section drains with proper drains has progressed during the year and thirty-eight cesspools were abolished.

Drains.

	Public.			Private.		
	1925	1926	1927	1925	1926	1927
Masonry drains—						
Linear yards ..	No record	No record	No record	No record	No record	No record
Linear yards constructed ..	1,400	1,546	916	1,307	982	7,595
Linear yards repaired ..	2,250	600	400	315	500	7,258
Storm water earth Drains—						
Linear yards ..	5,630	5,630	5,630	..	..	444
Linear yards cleaned and graded ..	15,910	15,910	3,58,515	..	..	..

Cesspools and Cesspits.

	1925	1926	1927
No. of cesspools and cesspits approximately ..	5,300	5,459	6,114
No. of cesspools and cesspits constructed ..	167	35	690
No. of cesspools and cesspits abolished ..	8	27	38
No. of cesspools and cesspits cleaned ..	449	281	261

Public Latrines.

For Males.						For Females.					
No.			No. of seats.			No.			No. of seats.		
1925	1926	1927	1925	1926	1927	1925	1926	1927	1925	1926	1927
2	3	4	10	13	18	2	3	3	6	8	8

The new latrine erected during the year is fitted with glazed squatting basins with automatic flushing.

(b) *Refuse Disposal and Scavenging.*—This has been carried out as described in last year's report.

	1925	1926	1927
No. of men employed to remove refuse ...	191	191	191
" " carts at work daily ...	46	53	53
No. of loads of refuse removed (daily average) ...	151	201	236
" " " " " burnt, " " ...	144	147	129
" " " " " buried, " " ...	7	54	107
" " " " " dust and incombustible material ...	20	17	23
No. of dust bins provided ...	750	2,048	565

(c) *Water Supply.*—The system is low pressure and has been considerably affected by the increased number of connections. There has been no actual shortage but the mains appear to be inadequate to maintain a continuous supply to some parts of the town.

The limited supply has prevented further connections being made to houses and trade premises and points to the necessity of providing some means whereby the water going to waste at the springs could be conveyed to the town.

	1925	1926	1927
PIPE-BORNE WATER:—			
Source ...	Spring	Spring	Spring
No. of linear yards ...	25,340	32,597	47,530
No. of standpipes along roads ...	46	49	78
No. of standpipes in compounds and houses ...	401	459	444
WELLS:—			
Public—			
Number ...	6	6	6
No. of pumps protected against surface water and mosquito-protected ...	...	...	...
Private—			
Number ...	88	83	82
No. of pumps protected against surface water and mosquito-protected ...	8	8	8

	1925	1926	1927
TANKS:—			
Public—			
No. underground ... ..	...	...	...
No. mosquito-protected and served by pumps ... ..	...	...	...
No. above ground	2	2	2
No. mosquito-protected	2	2	2
No. of 400 gallons capacity or less ... ..	...	...	...
No. above 400 gallons	2	2	2
Private—			
No. underground	5	5	5
No. mosquito-protected	5	5	5
No. above ground	405	408	408
No. mosquito-protected	155	159	160
No. of 400 gallons capacity or less	349	352	352
No. above 400 gallons	56	56	56
NATURE OF TANKS:—			
Wood ... ..	...	...	...
Iron	155	158	158
Concrete	255	255	255
BARRELS:—			
Number	2,890	2,897	2,897
No. mosquito-protected	1,169	1,169	1,169
No. unprotected... ..	1,721	1,728	1,728

(d) *Offensive Trades.*—The six remaining camel-driven oil mills were removed from the town in June.

Pottery and Lime Burning continue to give rise to considerable nuisance.

(e) *Clearance of Bush.*—This work has been carried out as usual by the Sanitary Labour. Seventy-three thousand seven hundred and seventy-five square yards of bush and undergrowth was cut down and removed during the year.

(f) *Sanitary Inspections.*—The following were inspected by the Director of Medical and Sanitary Services:—Chwaka, Mkokotoni, Weti and Chake Chake.

The Deputy Director of Sanitary Services inspected Chwaka and Mkokotoni on several occasions, and also visited Pemba.

Systematic weekly house to house inspections were made by the mosquito searchers who have proved themselves invaluable for concerted mosquito reduction work and they also bring many nuisances to the notice of Sanitary Inspectors.

The following table summarises the routine work of the Inspectors:—

ZANZIBAR TOWN.

	1925.	1926.	1927.
No. of Sanitary Inspectors employed ...	5	5	6
No. of Apprentice Sanitary Inspectors employed ...	12	11	8
Visits to dwelling houses ...	3,412	285,703	455,384
„ hotels and bars ...	615	141	254
„ eating houses ...	742	1,241	4,570
„ lodging houses ...	1,110	724	3,179
„ aerated water factories ...	254	295	436
„ bake houses ...	330	223	312
„ foodstalls ...	1,300	1,420	2,463
„ cowsheds ...	1,210	802	2,857
„ godowns ...	1,256	618	4,572
„ markets ...	685	1,460	991
No. of boats and dhows inspected for mosquitoes ...	...	784	8,014
No. of notices served to remove insanitary conditions ...	1,822	3,096	3,099
No. of notices not complied with at end of year ...	46	31	28
No. of nuisances abated ...	6,115	7,800	5,270
No. of convictions for not removing insanitary conditions ...	52	141	29
No. of premises where mosquito larvæ were found ...	429	5,416	4,418
No. of mosquito notices served ...	194	150	1,520
No. of mosquito notices not complied with at end of year ...	nil	nil	3
No. of mosquito nuisances abated ...	429	5,416	4,628
No. of convictions obtained for not removing facilities for the breeding of mosquitoes... ..	nil	2	16
No. of houses cleaned and disinfected ...	2	20	9
No. of drains, tanks and barrels oiled ...	numerous	1,799	6,543
No. of linear yards of drain cleaned out and disinfected ...	2,215	560,740	358,515
No. of W. C's installed ...	...	8	17
No. of cesspools emptied ...	362	218	261
No. of cesspools covered with cement concrete covers ...	465	100	112
Ruins cleaned out ...	138	250	259
Huts demolished ...	5	22	21
No. of public latrines and urinals cleaned out daily ...	16	21	17
No. of regularly cleaned out cattle troughs ...	4	4	4
Paupers removed ...	...	115	121
Paupers buried ...	146	50	78
Lepers sent to Pemba ...	14	5	9
Cases of infectious disease removed to Isolation Hospital ...	3	15	24

GENERAL MEASURES OF SANITATION, MKOANI, PEMBA.

Sewage Disposal.

System in Force.—The Assistant District Commissioner's house has a W.C. flushing into a cement covered pit, 30 feet deep.

In the houses of Asiatic officials the bucket system is in force

A number of Indian and native houses are provided with cesspits situated inside or just outside the house. A few of these are provided with cement covers.

Refuse Disposal.—Dustbins are emptied once daily. The material is destroyed by burning in an incinerator.

Water Supply.—Government houses are fitted with tanks for the collection of rain water. During the year a tank capable of holding 30,000 gallons was erected to catch rain water from the clove shed roof. This water is reserved for Government employees.

Two shallow wells of doubtful purity supply the inhabitants.

Borings were made during the year with a view to obtaining an additional supply of water, as during the dry season water has to be obtained from a well half a mile away from the town.

HYGIENE AND SANITATION, CHAKE CHAKE, PEMBA.

The Medical Officer also performed the duties of Sanitation Officer during the year.

The staff consisted of an Asiatic Sanitary Inspector, two Mosquito Inspectors, two Mosquito Boys, one Poor Attendant, twelve Sweepers, six Special Gang Boys, one Headman and one Donkey Boy.

During the year the Anti-Malarial drainage system in the Mtenga Swamp was completed and since the completion of the work anopheline larvæ have not been found in the locality.

Five more or less permanent breeding places for Anopheline exist in and around the township and as they cover an area of 18 acres it is obvious that with the above staff, satisfactory control is impossible.

Epidemic Diseases.

No cases of small-pox were reported during the year. Vaccination numbered 1,420.

Tuberculosis.—The number of cases treated is increasing year by year. Very little can be done until a Sanatorium is erected to which cases may be sent for treatment.

Helminthic Diseases.

Ankylostomiasis.—No preventive measures were undertaken during the year. The condition is so widely spread that mass treatment and mass preventive measures are necessary if progress is to be made.

Bilharziasis.—Experimental work is in the hands of the Economic Biologist, Zanzibar. It is almost impossible to say whether this disease is increasing or not as the natives believe the condition to be due to Gonorrhœa and are slow to come for treatment. No centre of infection has been localised.

Ascariasis.—Very few cases have been reported.

GENERAL MEASURES AND SANITATION.

Sewage Disposal and Drainage.

(a) European quarters are provided with water flushing closets draining to soak-away cesspits.

(b) Asiatic Officials' houses have soak-away cesspit privies with cement tops.

(c) *Public Latrines*.—One was erected in 1926 in the vicinity of the Markets. It is a cesspit privy with cement top.

(d) *Private Latrines, Indian Houses*.—Approximately 160 provided with cement covered soak-away cesspit privies, some inside and others outside the dwelling houses.

Swahili Houses.—Usually a soak-away cesspit privy covered with cement or hard clay laid on lattice work, situated inside or just outside the house, in the latter case connected with a tin pipe to a privy or bathroom within the house. In houses not provided with a cesspit the occupants defæcate in the bush, preferably close to water.

Refuse Disposal and Scavenging.—Dustbins are distributed throughout the town. The contents of the dustbins are emptied once or twice daily into dust carts and removed to the incinerator and burnt. In Kichungwani the refuse is collected in baskets and burnt or carried to a dust cart for removal to the incinerator. The paths in Kichungwani are so narrow that a dust cart is unable to pass through them.

One thousand four hundred and seventy-three cart loads of rubbish were removed to the incinerator during 1927.

Water Supply.—This is derived from shallow springs and is liable to contamination from soak-away cesspit privies. The area round the Pumping Station is kept clean and protected. Water is distributed to stand-pipes situated throughout the town; and in the houses of European Officials water is laid on.

FOOD IN RELATION TO HEALTH AND DISEASES.

Markets.—Regular inspection is necessary to maintain a standard of cleanliness. The "Meat Section" was "fly proofed" early in the year and the "Fish Section" has been recommended for proofing this year.

Aerated Water Factories.—Factories are inspected regularly.

Slaughter House.—This is satisfactory except for its situation. At high tide the meat is conveyed across the creek in a canoe and carried by labourers from the pier to the Market. Cattle are inspected before slaughter and meat is examined previous to sale.

Reduction of Vermin.—248 rats destroyed and 274 dogs poisoned.

Flies.—Fly plates were made at the Health Office and placed on the Market tables and undoubtedly reduced the nuisance in that locality. All rubbish dumps were burnt.

All such efforts are practically useless as almost every house constitutes a breeding ground.

TABLES RELATING TO THE ABOVE.

Approximate area of Township.	Number of proclaimed open Spaces.
200 acres.	Nil.

POPULATION OF TOWNSHIP.

No. of Natives approx.	Asiatics.	Europeans.	Total.
2,560	440	15	3,015

RECOMMENDATION FOR FUTURE WORK.

(1) Swamp and Surface Drainage.

(2) Provision of latrines for the use of (a) inhabitants of huts not provided with cesspits (b) for the use of inhabitants whose cesspits are recommended for closure owing to extensive structural defects (c) for the use of native servants in Government houses.

HYGIENE AND SANITATION, WETI, PEMBA.

I. PREVENTIVE MEASURES.

(a) Mosquito and Insect-Borne Diseases.

The usual preventive measures were taken and have been in force throughout the year. These include oiling of tanks and pits, clearing and oiling swamps, clearing of bush, etc.

Mosquito nuisances found numbered 54 for which notices were served and complied with. Fifteen cesspools were oiled weekly and the four large swamps were similarly oiled. Over 29,000 square yards of bush and undergrowth were cleared. By these measures together with frequent inspection of premises to the number of 7,482 during the year, the town was kept reasonably free from mosquitoes.

(b) *Epidemic Diseases.*

There was very little in the way of epidemic disease in Weti during the year. One case of small-pox was diagnosed and was promptly dealt with. Vaccinations during the year numbered 4,030. Sporadic cases of bacillary dysentery arose but the disease never reached epidemic proportions.

Eleven cases of Tuberculosis were diagnosed.

(c) *Helminthic Diseases.*

Ankylostomiasis.—These cases showed a falling off as compared with the previous year of about 90 cases. In 1927, 494 cases were treated. The disease was very common among the mainlanders who came to Weti temporarily for work during the clove harvest.

Bilharziasis.—Twenty-five cases of this disease were treated as against 18 for the previous year. It is found that many cases fail to return for injections as soon as the immediate symptoms are relieved.

Ascariasis.—Is of frequent occurrence and is chiefly found in children.

II. GENERAL MEASURES OF SANITATION.

Sewage Disposal and Drainage.—In the case of European and the better class Asiatic house, water-flushed closets draining into pits are used. A few of the houses employ the bucket system and the excreta are deposited in the sea.

Public latrines are not yet completed but will be in use at an early date; it is hoped that with the provision of these public latrines *Ankylostomiasis* will decrease.

Over 7,500 loads of refuse were removed from the town during the year and incinerated. The number of men employed on this work (fifteen) was found to be insufficient for the effective scavenging of the upper parts of the town. This number has lately been increased by six with beneficial results.

The water supply of the town is excellent both in quality and quantity.

Sanitary Inspections were made at intervals by the Medical Officer and constant supervision was given to the work by the Asiatic Sanitary Inspector.

III. SCHOOL HYGIENE.

The School Clinic caters for all children reporting sick from Government and Government aided schools in the town. Though tending to be overshadowed by the treatment of minor illness and injuries, its main function has not been lost sight of and much good work has been done in the way of preventive medicine by diagnosing and treating disease in its early stages.

Venereal Diseases account for 1.7% of the diseases treated. The fact that any non-inherited venereal disease should occur at all among school boys speaks volumes for their home life.

The following table shows the most important defects discovered at routine examinations and their relative distribution among the various races:—

	Arabs.	Swahilis and others.	Indians.
Lack of cleanliness	14%	18%	26%
Defective teeth	40%	19%	33%
Enlarged tonsils	13%	9%	20%
Defective vision	10%	5%	8%
Parasitemia	26%	28%	7%

The total number of cases treated at the School Clinic during the year was 1,895.

IV. LABOUR CONDITIONS.

As mentioned in last years report labour is almost entirely agricultural, seasonal and migratory and is widely scattered throughout the plantations during the clove picking season.

With this type of labour, the same supervision cannot be given or such hygienic conditions demanded as could be reasonably required in camps built for permanent labour under contract.

A native dispenser is attached to the larger camps engaged in road construction, and all labour receives free medical attention at the various hospitals and dispensaries.

V. HOUSING AND TOWN PLANNING.

With regard to housing and town-planning, a plan for the whole town has been prepared by Mr. H. V. Lanchester, and will be carried out as funds permit. A town-planning decree was enacted in 1925.

The Hollis Road which forms part of the town plan and is carried on a new bridge and embankment across the creek from near the new port to Gulioni was opened to the public in October, and marks a definite and important step forward in the transport facilities of the town.

The continued growth of new native residential areas is doing much to relieve the congestion in the more densely populated areas.

	1925	1926	1927
Total number of houses, Zanzibar Township	3,330	3,351	3,354
Number occupied by Europeans	135	136	137
Number occupied by Natives and Asiatics	3,195	3,212	3,217
Number of huts	7,862	8,112	8,742

VI. FOOD IN RELATION TO HEALTH AND DISEASE.

(a) Inspections and Control.

The number of various articles of food stuffs examined during the year was 82,131 as compared with 3,108 in 1925 and 36,081 in 1926, whilst the number condemned as unfit for human consumption was 10,077 as compared with 3,108 in 1925 and 36,081 in 1926.

(b) Markets, Zanzibar Town.

The markets are controlled by the Senior Commissioner and a market master is responsible for the general supervision of the market.

The markets are inspected twice daily by a Sanitary Inspector who is also responsible for cleansing; the labour for this purpose being supplied by the Health Department.

The circulating hot water system which was installed at the end of 1926 has proved a boon and the stalls can rapidly be cleansed and kept scrupulously clean by the use of this water.

(c) Dairies.

All the sheds at the Government Dairy were occupied and three temporary sheds were erected to receive the cattle from the last of the licensed cowsheds in the town.

The system of drainage remains unsatisfactory as the cesspools do not absorb the washing water from the sheds and have to be emptied by hand every other day.

A junior sanitary inspector attended the dairy daily to supervise the milking, and the cleansing of the utensils.

No improvement was effected with regard to the milk brought in by natives, but arrangements were made at the end of the year for all native purveyors of milk to bring their supplies to the Milk Depot for examination and it is hoped that this measure will lead ultimately to a proper control of this source of supply.

Ten samples were taken during the year.

(d) Aerated Water Factories.

All Aerated Water Factories are inspected at least once a week. Further improvements have been effected and the frequency of metallic contamination has been reduced.

	1925	1926	1927
Samples taken	65	80	34

(e) Slaughter House.

The slaughter house is under the supervision of the Veterinary Officer who inspects all animals and meat.

VII. REDUCTION OF VERMIN.

(a) *Rats.*

Three-grain Barium Carbonate and "Common Senæ" poison baits were used continually throughout the year in addition to nipper and cage traps.

	1925	1926	1927
Number of trappers employed	7	8	7
Rats trapped	9,183	16,654	18,739
Rats purchased	4,251	3,944	3,605

Classification.

	Rattus Rattus.	Mus Norvegicus.	Fachyura Cærulea.	Mus Musculus.	Cricetomys gambianus.	Unclassified.
1925	11,105	1,059	1,027	93	150	..
1926	18,500	477	1,399	58	174	383
1927	20,992	51	1,172	..	129	..

(b) *Flies.*

One thousand four hundred and eighteen breeding places were found during the year and the nuisances abated.

(c) *Pariah Dogs.*

One hundred and seventy-one pariah dogs were destroyed during the year.

(B) MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF
HYGIENE AND SANITATION.

Instruction in elementary tropical hygiene is included in the course for teachers at the Government Schools. Short lectures and demonstrations on subjects of Public Health interest are also given by Dr. A. H. Spurrier in the Museum to groups of pupils from various schools in the town.

The Economic Biologist during various tours lectured to villagers and school children on Malaria, Hookworm and Bilharziasis. Practical demonstrations were given, such as recognition of mosquito larvæ, snails suspected of carrying Bilharziasis, and ova of Ankylostomes.

(C) TRAINING OF SANITARY PERSONNEL.

Apprentices are selected from locally-born British Indians and Natives who have sufficient education to profit by the instruction given.

The work of a sanitary inspector is arduous and unpleasant and it is difficult to attract the right type of candidate while the advantages of the shorter-timed and more popular clerical appointments are offered at more remunerative salaries.

Elementary lectures are given to these apprentices on infectious diseases, vaccination and general sanitation, and also practical demonstrations in vaccinating, disinfecting, building construction, meat and food inspection, office routine and the general duties of a sanitary inspector.

(D) RECOMMENDATIONS.

The recommendations in last year's report with regard to Insect-Borne and Helminthic Diseases are being gradually carried out, whilst the proposals contained in other recommendations are under consideration.

Attention is again drawn to the desirability of appointing a Lady Medical Officer to undertake Maternity and Child Welfare Work.

Pemba Island.

The opening up of the Island by the construction of a road system, and the opening of District Dispensaries and the establishment of the Leper Settlement at Funzi Island render the appointment of a Sanitation Officer to undertake the care of Funzi, charge of the district dispensaries and general public health work desirable.

Continuation of anti-malarial work and swamp drainage as funds allow.

J. M. SEMPLE,

*Acting Deputy Director of Sanitary Services,
Zanzibar Protectorate.*

IV. PORT HEALTH WORK AND ADMINISTRATION.

The Port Health Work was undertaken by a Sanitation Officer throughout the year.

Pratique is given to vessels between the hours of 7 a.m. and 10 p.m. and for this purpose all vessels are boarded by the Port Health Officer.

Immigrants arriving from Bombay are placed under surveillance for a week after arrival and all vaccinated who are considered to require it.

The baggage of all deck passengers is claytonised before being passed through the Customs.

The crews and passengers of dhows are required, after pratique has been given, to report at the Health Office for inspection and, if necessary, vaccination.

The total number of steamers granted pratique during the year was 553 as compared with 521 in 1926.

The total number of dhows granted pratique was 1,289 as compared with 1,409 in 1926.

No steamers or dhows were quarantined during the year, neither was the port in quarantine.

The following table shows the monthly figures for ships, dhows, and passengers.

Port Sanitation Return 1927.

Months.	Arrivals.		Ships quarantined.	Ships claytonised.	Passengers landed.	Passengers under surveillance.	Number of persons vaccinated	Persons placed in quarantine
	British.	Foreign.						
<i>Steamers</i>								
January	26	22	..	..	2,361	..	55	..
February	21	19	..	..	1,957	..	20	..
March	26	18	..	..	1,451	..	98	..
April	30	24	..	..	1,873	..	262	..
May	25	14	..	..	1,573	..	187	..
June	29	15	..	..	1,558	..	163	..
July	27	15	..	..	1,835	..	58	..
August	32	15	..	..	1,395	..	85	..
September	27	16	..	..	1,463	..	128	..
October	33	12	..	..	1,598	..	112	..
November	24	12	..	..	1,427	..	125	..
December	41	8	..	..	1,963	..	133	..
<i>Men-of-War</i>	..	..	..	..	..	..	..	..
Total ..	343	190	..	..	19,954	..	1,376	..
Total for 1926 ..	347	172	1	1	23,429	325	4,988	231

Port Sanitation Return 1927.

Months.	Arrivals.			Dhows quarantined.	Dhows claytonised.	Passengers under surveillance.	Number of persons vaccinated.	Persons placed in quarantine.	Passengers landed.
	British.	Foreign.	Total.						
<i>Dhows—</i>									
January	85	47	132	..	..	..	694	..	809
February	83	53	136	..	..	..	580	..	619
March	96	75	171	..	..	..	320	..	488
April	76	33	109	..	..	..	141	..	251
May	81	12	93	..	..	..	102	..	209
June	69	11	80	..	..	..	88	..	198
July	86	8	96	..	..	..	132	..	230
August	87	15	102	..	..	..	209	..	349
September	91	1	92	..	..	..	98	..	194
October	76	10	86	..	..	..	101	..	240
November	93	10	103	..	..	..	96	..	205
December	78	11	89	..	..	..	82	..	175
Total ..	1,003	286	1,289	..	..	..	2,644	..	3,967
Total for 1927 ..	1,132	277	1,409	..	..	..	2,131	..	5,419

V. MATERNITY AND CHILD WELFARE

ZANZIBAR MATERNITY ASSOCIATION.

This association is controlled by a Committee consisting of the Director of Medical and Sanitary Services (President), other Government officials and private persons.

The Government contributes an annual grant to the Association and the necessary balance is provided by private subscriptions and donations, and by fees from patients who can afford to pay.

The Annual Report of the Association is appended (Appendix IV). The natives are gradually learning to appreciate the value of the services rendered, and excellent work is also being done among women and children at the Dispensary attached.

The greatest credit is due to the nursing sister in charge for the excellent work she has done since her appointment. During the year two Arab girls of good family have undergone a course of training in midwifery under her supervision.

Beyond what is done by the above Association, limitation of staff prevents this important branch of public health work being seriously undertaken.

VI. HOSPITALS AND DISPENSARIES.

(a) OUT-PATIENTS.

As recorded under Public Health there was a very considerable increase in the total number of attendances at the Government Hospitals during the year under review. This is largely due to the continuation and increase of the work done at the District Dispensaries which is becoming each year a more important factor in the life and health of the people. Throughout the year these District Dispensaries have been under the control of a Medical Officer, who is responsible for the training of the Dispensers and the organization and control of the different dispensaries.

A central training school and dispensary has been established in the buildings known as the Old Barracks. Here the apprentice dispensers, who must be able to read, write, and speak English are taught the elements of anatomy and physiology and given a general outline of common diseases and their treatment. They attend the out-patient practice of the hospital and are taught how to dress wounds and treat minor ailments. In this central dispensary all stock mixtures for the district dispensaries are made up under the supervision of a qualified African Dispenser of many years' service. The apprentice dispensers are required to assist in this work and learn the dosages of ordinary drugs commonly used. It should be pointed out here that all mixtures used in this work are stock mixtures and the prescription and dose are typed on the bottle, and as no drugs containing poison are used no ill-effects due to indiscriminate dosing are

likely to ensue. The apprentice dispensers also attend lectures on sanitation given at the Health Office. The Medical Officer in charge, in addition to this work, visits the different dispensaries weekly where he sees cases reserved for him by the dispensers, does minor surgery such as the extraction of teeth, gives injections of B.P.S.T. for yaws, supervises the work of the dispensers and sees that they are keeping the knowledge they have acquired up to date. It will be realised that owing to the short course of training and lack of primary education of the personnel to be trained that their knowledge is very elementary, nevertheless the success of these dispensaries has been remarkable, and indeed financially embarrassing, and they have been the means of bringing to light the prevalence of diseases such as yaws and schistosomiasis which are being proved to be far commoner than was supposed.

In Pemba the supervision of the District Dispensaries is entrusted to the Medical Officers at Weti and Chake Chake, who, owing to the pressure of other work are unable to devote as much time to this work as is the case in Zanzibar. Brief details of the work done at each dispensary in Zanzibar are given below:—

<i>Mwera.</i>	1926	1927
New cases	... 2,209	3,641
Repetitions	... 3,685	6,706

Prevailing diseases were scabies, constipation, ankylostomiasis, bronchitis, malaria, ulcers, and local injuries. More malaria was present than in neighbouring dispensaries. Many of the ankylostomiasis cases were complicated with marked secondary anæmia and cardiac changes.

<i>Mahonda.</i>	1926	1927
New cases	... 2,831	3,666
Repetitions	... 5,968	5,863

Prevailing diseases were ulcers, ankylostomiasis, scabies, boils, abdominal colic, constipation and mumps (slight epidemic). The attendance was steady. The dispensary was greatly used by labourers on neighbouring Government agricultural plantations.

<i>Uzini.</i>	1926	1927
New cases (opened December)	... 49	3,414
Repetitions	... 4	7,059

Prevailing diseases were ulcers, constipation, scabies, abdominal colic, gonorrhœa, bronchitis, neuralgia and local injuries. Forty per cent of the cases were women. On each weekly visit of the Medical Officer over 50 patients were always present.

<i>Chwaka.</i>	1926	1927
New cases	... 2,395	3,772
Repetitions	... 3,996	7,303

Prevailing diseases were ulcers, constipation, scabies, abdominal colic, gonorrhoea, bronchitis, neuralgia and local injuries. Patients attended from villages 10 miles away. Interesting skin cases were seen and several cases of severe ankylostomiasis were noticed. The villages are struggling and scattered. The patients are slowly overcoming their suspicion with regard to western medicine.

<i>Mangapwani.</i>	1926	1927
New cases	... 1,498	2,354
Repetitions	... 3,639	4,360

Prevailing diseases were ulcers, scabies, ankylostomiasis, malaria, bronchitis and conjunctivitis.

After the opening of the new road, enabling a weekly visit to be paid by the Medical Officer, the new cases seen were trebled.

<i>Tunguu.</i>	1926	1927
New cases (opened October)	... 431	2,014
Repetitions	... 889	5,926

Prevailing diseases were ulcers, scabies, ankylostomiasis, malaria and bronchitis. One-third of the patients were women. Always over 25 patients attended on the Medical Officer's weekly visit.

<i>Mbiji.</i>	1926	1927
New cases	... 2,912	3,235
Repetitions	... 4,135	10,277

Prevailing diseases were ulcers, ankylostomiasis, scabies, constipation, bronchitis, malaria, otorrhoea and conjunctivitis. Forty per cent of the patients were women. The great number of repetition cases speaks well for the patients' confidence in the dispensary. There were always 30 patients in attendance on the Medical Officer's weekly visits.

<i>Kizinkazi.</i>	1926	1927
New cases	... 2,400	2,196
Repetitions	... 3,372	3,263

Prevailing diseases were ulcers, scabies, constipation, bronchitis, caries of teeth and conjunctivitis. The slight decrease in the number of patients is partly due to the difficulties of transport preventing a weekly visit by the Medical Officer. The new road to be constructed shortly will be of great benefit in giving extra facilities for this purpose.

<i>Machui.</i>	1926	1927
New cases	... 2,219	3,366
Repetitions	... 2,581	2,762

Prevailing diseases were ulcers, bronchitis, constipation, colic and scabies. Only very simple cases could be treated satisfactorily, the boy in charge being of the Agricultural staff and untrained.

<i>Bueleo</i> (Dimani).	1926	1927
New cases (opened November 26) ...	200	1,390
Repetitions ...	228	1,883

Prevailing diseases were scabies, ulcers, constipation, bronchitis, conjunctivitis, neuralgia and malaria.

The people in some of the villages about three miles from the dispensary are wild and insular. Many of the ulcers treated were tropical ones of a serious nature, chiefly due to neglect on the part of the people.

<i>Selem.</i>	1926	1927
New cases ...	3,734	3,611
Repetitions ...	6,139	6,973

Prevailing diseases were malaria, rheumatism, neuralgia, bronchitis, constipation, colic, ulcers, scabies, ankylostomiasis and local injuries.

The dispensary catered for the neighbouring workers in the Agricultural Department and the small hospital treated post-operative cases of tropical ulcers, pneumonia, malaria and so on, and was greatly appreciated by the natives.

<i>Bububu.</i>	1926	1927
New cases ...	not opened	2,461
Repetitions ...	„	6,260

Prevailing diseases were ulcers, scabies, ankylostomiasis, constipation, bronchitis and malaria.

Passengers on the train were amongst the sick and several of His Highness the Sultan's retainers patronised the dispensary. Towards the close of the year the help of Miss Gunn, of the U.M.C.A. was of the greatest assistance in attracting women for treatment.

From all these dispensaries the Medical Officer and the Dispenser also paid occasional visits to neighbouring plantations and villages.

1927.

	Males.	Females.	Total.
<i>Mucmbeladu.</i>			
New cases ...	4,435	5,508	9,943
Repetitions			24,206

Average number of patients treated daily=96.

Prevailing diseases were constipation, ulcers, scabies, bronchitis, malaria, chronic rheumatism, conjunctivitis, gonorrhœa and bronchial catarrh.

From April to November the Medical Officer visited daily. During the rest of the year three visits a week were paid. Practically all types of diseases present in Zanzibar were diagnosed and treated. The dispensary was of great benefit in treating people of the Gulioni District, which is on the outskirts of the town some distance from the Native Hospital. By the influence of the matron of Mwembeladu Maternity Association many of the women patients after having had their symptoms alleviated at the dispensary overcame their fear of operative treatment and were persuaded to proceed as in-patients to the Native Hospital.

During the year the Medical Officer visited several headmen in their villages near by and in all cases a friendly spirit between them was the result. The number of new cases a month reached its zenith in May when 1,060 were treated. All types of minor operations took place and irrigation treatment for gonorrhœa was instituted. Yaws, syphilis and suitable cases of malaria were treated by intra-muscular injections. Bilharzia was treated with intravenous injections of antimony tartrate. Auroscopic and Ophthalmoscopic clinics were started.

A daily sick parade from the local Government school attended.

His Excellency the British Resident and His Highness the Sultan graciously favoured the dispensary with a visit of inspection during the year.

It was noticed that huge tropical ulcers so prevalent at the beginning of the year were absent towards its close and on the whole the health of the people of this district would appear to be vastly improving.

MEKOKOTONI HOSPITAL.

Prevailing diseases were ulcers, yaws, constipation, scabies, malaria, local injuries, ankylostomiasis, bronchitis and rheumatism.

Yaws.—Five hundred and twenty-five cases were treated, chiefly patients coming from outlying villages. Great help was received from the Assistant District Commissioner who used his influence in starting the campaign. The Akida and Masheha marshalled the patients who attended weekly at the Hospital and were injected with Sodium Potassium Bismuth Tartrate.

Table of Attendances.

	1925	1926	1927
Out-Patients	2,881	2,470	4,268
In-Patients	46	90	70
Deaths	1	—	1
Cases of Yaws	3	11	525
Repetitions	2,908	2,531	3,286

Cause of Death—Lobar Pneumonia.

Prisons, Police Lines and Markets were inspected periodically from time to time. Nine hundred and fourteen people were vaccinated and 177 dhows examined as to the fitness of their crews.

TABLE.

The following table shows, by stations, the number of cases treated at the Government Hospitals and Dispensaries during 1925, 1926 and 1927:—

Stations.	Cases treated.		
<i>Zanzibar Island.</i>	1925	1926	1927
Zanzibar Hospital	... 16,544	24,505	20,618
Mwembeladu	... —	—	9,943
Selelem	... 1,660	3,734	3,611
Mkokotoni	... 2,881	2,470	4,268
Mwera	... 1,263	2,209	3,641
Chwaka	... 1,425	2,395	3,772
Mbiji	... 2,872	2,912	3,235
Machui	... 1,740	2,219	3,366
Mahonda	... 1,446	2,831	3,666
Mangapwani	... 1,756	1,498	2,354
Kizimkazi	... 673	2,400	2,196
Bweleo	... —	200	1,390
Tunguu	... —	431	2,014
Uzini	... —	49	3,414
Bububu	... —	—	2,461
Walezo	... —	—	2,285
<i>Pemba Island.</i>			
Weti	... 3,464	4,153	4,257
Chake Chake	... 8,049	8,675	8,052
Mkoani	... 3,355	5,589	4,862
Kengeja	... 1,557	2,000	3,394
Mtangatwani	... —	1,567	3,015
Jambangome	... 278	1,492	1,940
Tumbe	... —	816	1,071
Fufuni	... —	891	1,478
Tundaa	... —	1,008	1,834
Stambuli	... —	1,695	1,510
Mzambaraoni	... —	604	1,915
Ole	... —	242	1,632
Total	48,963	76,585	107,189

The apparent reduction in the total number of patients treated at Zanzibar Hospital is due to the fact that in last year's returns the total number of patients treated at the Hospital and Mwembeladu were recorded under the heading Zanzibar, whilst this year figures for Mwembeladu Dispensary and Zanzibar Hospital are given separately.

(b) IN-PATIENTS.

The total number of patients admitted to all Hospitals in 1927 was 3,650 with 291 deaths as compared with 3,224 patients with 187 deaths in 1926 and 2,966 patients with 123 deaths in 1925.

European Hospital, Zanzibar.—The number of patients admitted was 59 with 2 deaths as compared with 76 admissions and 2 deaths in 1926 and 62 admissions with no death in 1925.

The most important causes of admission were:—

Paratyphoid B.	2	Heart Disease	1
Malaria	11	Appendicitis	2
Dysentery	1	Injuries	5
Tuberculosis	1		

Asiatic and Native Hospitals.—The number of Non-Europeans, admitted to all Hospitals was 3,406 as compared with 3,148 in 1926 and 2,898 in 1925.

The following table shows the number of admissions, with deaths, at each station during the past and previous years.

	1925.		1926.		1927	
	Cases.	Deaths.	Cases.	Deaths	Cases.	Deaths.
<i>Zanzibar Island:</i>						
Zanzibar	1,699	76	1,922	137	2,110	212
Mkokotoni	95	1	90	—	70	1
Selem	39	—	46	1	86	—
<i>Pemba Island:</i>						
Weti	398	15	467	16	497	29
Chake Chake	529	30	496	27	491	42
Mkoani	138	1	127	4	152	5
Total	2,898	123	3,148	185	3,406	291

The most important causes of admission were:

Typhoid Fever	1	Paralysis	17
Paratyphoid A.	1	Heart Diseases	23
Paratyphoid B.	11	Broncho-Pneumonia	37
Malaria	306	Pneumonia	44
Blackwater Fever	2	Ankylostomiasis	196
Small-pox	42	Hernia	127
Influenza	77	Orchitis	25
Dysentery	46	Hydrocele	177
Tuberculosis	98	Cellulitis	144
Syphilis	59	Ulcer	402
Gonorrhœa & Complications	46	Elephantiasis	83
Apoplexy	1	Injuries	330

(c) OPERATIONS.

The attached table gives the number of operations performed at the three different hospitals during the year.

	Operations regarded as Major.	Operations regarded as Minor.
Zanzibar	584	628
Weti	190	103
Chake Chake	293	518
	<hr/>	<hr/>
Total	1,067	1,249
		<hr/>
Total Operations		2,316
		<hr/>

The work at these different hospitals, including operations was undertaken as follows throughout the year:—

Zanzibar.—Dr. Vassallo until the date of his departure on leave on 27th July, 1927, when he was relieved by Dr. Young.

Weti.—Dr. Young until this date, when relieved by Dr. Pitchford.

Chake Chake.—Dr. Young until Dr. Austin returned from leave and took over charge on 15th May, 1927.

Dr. McCarthy assisted the Resident Surgical Officer at the Native Hospital from the date of his arrival on March 1st to the end of the year.

(d) X-RAY EXAMINATIONS.

Screenings numbered 72 and 21 photographs were taken. The valuable assistance of the Director of Railway and Electricity and his staff is again gratefully recorded

(e) POST-MORTEMS.

The number of post-mortems performed during the year was 16. Many interesting pathological conditions were found and ankylostome counts done, but pressure of other work prevented adequate reports being made and lack of space prevents full details being recorded in this report.

(f) MEDICAL BOARDS AND EXAMINATIONS.

During the year 84 Medical Boards were held at the Zanzibar Hospital, 211 candidates were medically examined for Government and Naval employment, and 101 officials (Europeans and Non-Europeans) were examined prior to proceeding on leave.

(g) DENTAL SERVICE.

As last year this work was undertaken by Captain Newton of Tanganyika who again rendered valuable service. He spent 99 days in the Protectorate and the following statistics of his work are given:—

Attendances	229
Fillings	75
Extractions	313
Pulp treatment	11
Sealings	35

(h) *Infectious Diseases Hospital.*

The following table shows the admissions in the Guloni Infectious Diseases Hospital during the year 1927.

	Remaining from 1926.	Admitted during 1927.	Total.	Died.	Discharged.	Remaining end of 1927.
Small-pox	9	41	50	19	31	...
Suspected	...	1	1	...	1	...
Small-pox	...	1	1	...	1	...
Measles	5	12	17	...	17	...
Chicken-pox	...	9	9	...	9*	...
Leprosy	...	5	5	...	5	...
Suspected						
Leprosy						
Total	14	69	83	19	64	...
<i>Contacts:—</i>						
Small-pox	2	39	41	...	41	...
Total	2	39	41	...	41	...
Grand Total	16	108	124	19	105	...

* 6 sent to Funzi, 1 sent to India and 2 sent to Bagamoyo.

(i) BUILDINGS.

Statement of work carried out during 1927

Zanzibar.	Rs.	Cts.
Addition to Native and Subordinates Hospital ..	42,283	13
Addition to Health Building ..	17,466	63
Dispensary at Makunduchi ...	3,931	50
Latrine and Lavatory at Native Hospital ..	1,216	95
Prison Island Quarantine Station ...	2,272	00
<i>Pemba.</i>		
Leper Settlement at Funzi Island ..	14,936	37

VII. PRISON AND ASYLUM.

PRISONS.

At the beginning of 1927 there were 256 prisoners in all the Protectorate prisons. During the year 1,261 were admitted, 1,291 discharged, 10 died, leaving 216 in prison at the end of the year.

The cause of deaths were recorded is as follows:—

Chronic Nephritis	1
Cellulitis	1
Bac. Dysentery	2
General Debility	2
Cerebral Embolism	1
Drowned in sea	1
Chronic Bronchitis	1
Amœbic Dysentery	1
	—
Total	10
	—

CENTRAL PRISON, ZANZIBAR.

At the beginning of 1927 there were 157 prisoners in the Central Prison. During the year 1,014 were admitted, 1,005 were discharged and 8 died from causes shown above, leaving 168 in prison at the end of the year. The average daily number in prison were 152.90.

The total number of cases of illness treated was 1,226, of these 255 were admitted to the hospital, the average number in hospital being 2.55.

The principal causes of illness were Malaria, Ankylostomiasis, Respiratory, Digestive, and Skin diseases.

LUNATIC ASYLUM.

	M.	F.	Total.
Patients remaining on 31st December, 1926 ...	13	7	20
„ admitted during 1927 ...	16	1	17
„ discharged during 1927 ...	12	1	13
„ died during 1927 ...	6	—	6
„ remaining on 31st December, 1927 ...	11	7	18

The following deaths occurred during the year:—Dysentery 1, Ankylostomiasis and G.P.I. 2, General debility 1, Injury 1, and Leprosy 1.

The number treated for conditions other than mental were 104; out of these 5 were admitted to hospital. The chief ailments being respiratory and digestive diseases and injuries.

POOR ASYLUM.

The following table gives the number of in-patients treated during the year:—

Particulars.	M.	F.	Total.
Remaining on 1st January, 1927	... 69	35	104
Admitted during the year	... 328	67	395
Died during the year	... 61	29	90
Discharged during the year	... 225	35	260
Remaining at the end of the year	... 71	36	107

LEPER SETTLEMENTS.

See Appendix II. (Page 105).

VIII. METEOROLOGY.

The meteorological elements recorded during the year in Zanzibar (Town) and in Pemba (Banani) compared with the normals are as follows:—

	Zanzibar (Town)		Pemba (Banani).	
Temperature of the air:	1892-1926	1927	1899-1926	1927
Mean of daily maxima F.	84.5	84.6	86.6	86.1
Mean of daily minima	76.5	76.4	76.0	77.1
Mean of daily range	8.0	8.0	10.6	9.0
Mean	80.5	80.5	81.3	81.6
Rainfall (inches)	59.43	70.53	81.72	66.17
Rainy Days	100	140	162	161

These figures are supplied by the courtesy of the Honourable the Chief Secretary.

B. SPEARMAN,

Acting Director of Medical and Sanitary Services.

IX. SCIENTIFIC.

(a) ANNUAL REPORT OF THE BIOLOGICAL DIVISION
FOR 1927.

Staff.—Comprises the Economic Biologist and three Native Attendants.

At the request of the Director of Medical and Sanitary Services a survey was started to ascertain the intensity of various Helminthological infestations in the Protectorate.

Special attention was to be given to Ankylostomiasis and Bilharziasis. From previous reports both from Zanzibar and Pemba, the incidence for Ankylostomiasis was supposed to be in the region of 85 per cent.

These records were based on direct smear preparations only, presumably a number of light infections were missed.

The following plan of investigation was drawn up.

That groups of natives from various parts of the Protectorate employed in different occupations and as far as possible from areas showing varied meteorological and geographical features should be investigated. That these groups should be examined by the flotation method and a quantitative analysis made of the specimens submitted and expressed in the terms of "the number of ova per gramme".

The following graphs show the result of the findings.

Graph No. 1.—All those examined were adult male Swahilis in Government employment. The majority lived in Ngambo and their houses were fitted with concrete topped privy pits. None of them complained of feeling indisposed and were able to carry out their duties efficiently. Some of them were sweepers which entailed hard manual labour. Most of them did not wear boots.

As will be seen from the sampling of 100 employees the average number of ova per gramme was 2843 which equals about 14 worms per man.

Graph No. 2.—All those examined were adult native women, most of them domiciled in Ngambo. As far as could be ascertained the majority used concrete topped privy pits. If the six cases which were showing severe clinical symptoms of over 10,000 ova per gramme are eliminated, the average is 2,194 ova per gramme.

Graph No. 3.—Represents 50 Askaris from Ziواني Lines. The men were selected by the Officer-in-Command and Sergeant-Major as being physically and mentally fit. In fact they were considered to be first-class constables. It will be seen that a number of them show very heavy infections.

Those showing severe infestations, that is to say over 6,000 ova per gramme, were examined by the Medical Officer in charge of the Native Hospital, whose remarks are attached. The Police Lines are provided with an up-to-date system of privy pits.

Graph No. 4.—A group of male natives from Kizimkazi. Kizimkazi is a small village in the south of the island with a population of about 1,000. The climate is dry, rainfall not excessive, soil a light red loam between outcropping coral rock. The natives are mostly fishermen and owners of domesticated stock, a little ground around the village is planted with various food-stuffs. As far as could be ascertained the majority of the natives defæcate on the beach, there was very little evidence of soil pollution in the bush and around the village.

The average number of ova per gramme was 1,935.

Graph No. 5.—A group of natives from Ungujaukuu. Ungujaukuu is situated in the south of the island in a fertile cultivated belt. The rainfall is abundant and the country around the scattered village well cultivated. Most of the inhabitants are agriculturists. On enquiry it was found that the majority defæcated in the bush and that the beach some distance from the village, was not often used.

Evidence of soil pollution was found at many spots around the hamlet generally in deep shade and on a light loam. Soil samples passed through the Baerman apparatus revealed a number of sheathed larvæ presumably the offspring of human Ankylostomes.

It will be seen from these graphs and figures that the incidence of Ankylostomiasis is very high and that the average number of ova per gramme for all cases lies between 3,000 to 4,000. That is to say about 20 worms per person.

As far as could be judged all those who presented specimens of stools were fit and had nothing to complain of.

A series of cases were selected by the Medical Officers of the Native Hospital. They were judged to be clinically typical of Ankylostomiasis.

GRAPH No. 1.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Swahili-Males Government Employees	100	99	1	38	21	9	9	7	2	8	1	1	0	4

Average number of eggs per gramme for the group = 2343 = 24 worms per person.

GRAPH No. 2.

Swahili women from Mwenbeladu Dispensary.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Swahili women from Nngambo Mwenbeladu Dispensary	60	55	5	16	13	8	4	2	1	1	3	1	0	6

The majority from Nngambo many with concrete topped privies.

Average number of eggs per gramme = 3770 = 18 worms per person.

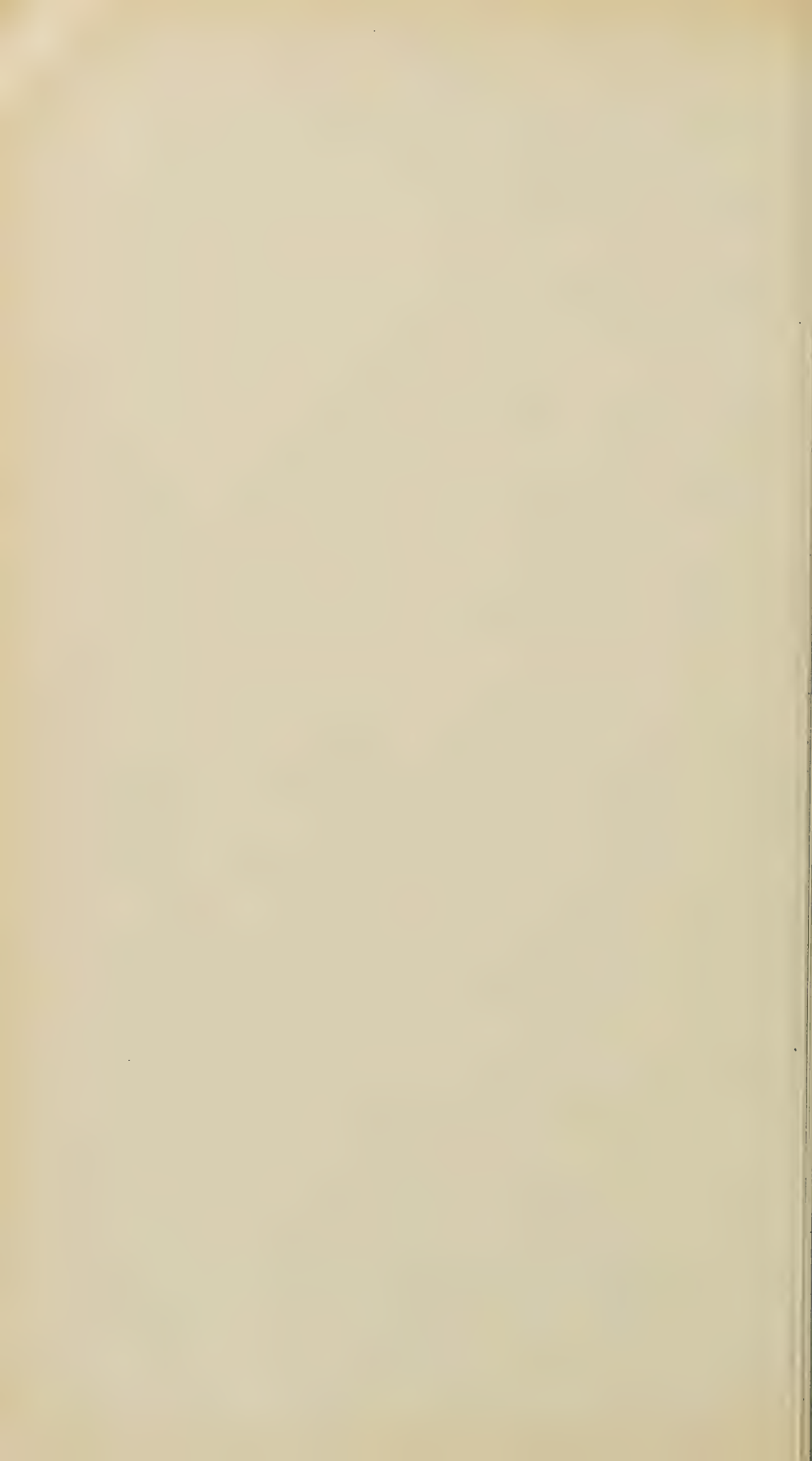
If the 6 cases (which were showing severe clinical symptoms) of over 10,000 ova are eliminated, the average is 2194 O.P.G. 10 worms per person.

GRAPH No. 3.

Occupation	No. Examined	No. Negative	No. Positive	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Askaris	50	1	49	9	10	16	2	0	3	1	1	1	1	3

Askaris from Ziواني Lines.

Average number of eggs per gramme for the group = 3710 = 18 worms per person.



MEDICAL EXAMINATION OF A GE

Askari No.	Mental State	Nutrition and Physique	Complaints elicited	Anæmia of Conjunctivæ	Tongue	Oedema	Ascites	Liver	Spleen
288	Fair intelligence	On the spare side	Nil	+	Clean and fairly red	Slight	Nil	Nil	Nil
103	Intelligent	Excellent	Darkness of vision	Nil	Clean and red	Faint suspicion	Nil	Nil	Nil
752 (57)	A jolly fellow who jumps to wrong conclusions	Excellent	Nil	Nil	Clean and red	Faint suspicion	Nil	Nil	+
24	Intelligent	Very good but stature small	Nil	Nil	Clean and red	Faint suspicion	Nil	Nil	Nil
770 (351)	Half reluctant and fearful	Fair	Constipation	+	White fur	Faint suspicion	Nil	Nil	Nil
769 (392)	Slow	On spare side	Nil	+++	Anæmia White fur	Faint suspicion	Nil	Nil	Nil
746 (164)	Intelligent	Good	Nil	Suspicion	Dirty Foul breath	Very slight	Nil	Nil	Nil
748 (405)	Slowish	Fair small	Blowing in ears and diarrhœa	Slight jaundice	Clean and red	Slight	Nil	+ Tender	Nil
278	Dullish	Good	Nil	Nil	Dirty Foul breath	Nil	Nil	Nil	Nil

ER, NATIVE HOSPITAL.

Cardiac action	Lungs	Pulse rate				Conclusions	Ova Count.
		Before 100 yd. run	After 100 yd. run	2 mins. after 100 yd. run	5 mins. after 100 yd. run		
Normal	Nil	66	120	76	80	Would hardly suspect Ankylostomiasis	5,400
Normal	Nil	74	116	80	78	Excellent health best of the lot. Darkness of vision suspicious	5,900
Normal	Nil	84	132	90	88	Not a case of Ankylostomiasis	11,100
Normal	At Rt. Apex P.N. impd. and expn. prolonged	70	104	86	80	Not a case of Ankylostomiasis	9,100
Rapid	Nil	76	90	84	80	Might suspect Ankylostomiasis	7,200
Very 1st aortic valvular disease	Nil	78	108	86	82	A fairly obvious case of Ankylostomiasis	12,600
Normal	Nil	74	108	94	88	Constipation	24,000
Missed 3 or 4	Nil	63	118	80	76	Would suspect possible Ankylostomiasis	18,000
Normal	Nil	82	140	96	80	Constipated	9,000

GRAPH No. 4.

Swahili adult males from Kizimkazi Village.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Fishermen and agriculturists	28	28	0	9	12	3	2	0	1	0	0	0	0	1

Average ova per gramme = 1935 = 9 worms per man.

GRAPH No. 5.

Adult male Swahilis from Ungujaauu.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Farmers	17	17	0	1	1	2	5	3	0	0	1	1	2	1

Average number of ova per gramme for the group = 5452 = 27 worms per man.

The results are as follows:—

No. 1. Swahili Male	...	39,000
No. 2. Swahili Male	...	4,500
No. 3. Swahili Male	...	11,400
No. 4. Swahili Male	...	13,500
No. 5. Swahili Male	...	17,700
No. 6. Swahili Male	...	7,500
No. 7. Somali Male	...	5,400
Total		99,000

Average number of ova for the 7 cases=

=14,000

=70 worms per person.

The Species of Ankylostome in Zanzibar.—A large number of worms were obtained by washing stools at the hospital, out of 400 identified the results were as follows:—

<i>Necator americanus.</i>	Males.	...	24%
<i>Necator americanus.</i>	Females.	...	68%
<i>Ankylostoma duodenale.</i>	Males.	...	8%
<i>Ankylostoma duodenale.</i>	Females.	...	4%

The figures represent:—

<i>Necator americanus.</i>	...	92%
<i>Ankylostoma duodenale.</i>	...	8%

No attempts were made to investigate the incidence of Ankylostomiasis by worm counts. It was found impossible and impracticable to collect all the faeces from a patient after treatment for 72 hours. An attempt was also made to enumerate the number of adult worms found in the duodenum from post-mortems. An average of 8 worms per person was found. I cannot vouch for the accuracy of these counts, as some of the worms may have been overlooked. The method used was to open up the duodenum wash all the liquid contents through a fine sieve. Worms attached to the mucosa of the duodenum were removed by fine forceps. The methods used for estimating the number of ova per gramme were those devised by Stoll throughout. All estimations were based on formed stools. Mushy and watery motions were not counted for ova. Many samples were too small in quantity or of a mushy or watery consistency, these were examined for incidence only.

Total number of stools examined ... 275

Total number positive for Ankylostomes ... 257 93.4%

Soil Pollution.—*The ripe or encysted larvæ of human Ankylostomes.*—In the Zanzibar Protectorate soil pollution is extremely common. Some of the better class natives of Ngambo have constructed deep privy pits with concrete tops, which are undoubtedly non-infective as regards Ankylostome larvæ. On the other hand there exist in the native quarter a large number of privy pits with earth-tops, these have proved to be infective.

The majority of the natives defæcate in the open generally selecting shady spots or any bushed areas. Others are not so selective but deposit their ordure anywhere. Favourite sites are naturally in proximity to water where the necessary ablutions after defæcation can be carried out. Many natives who have no conveniences in their houses defæcate in the bush near by and return to their houses and perform the necessary ablutions in a small room at the back of the house. The soil around the bathing tub in these primitive bath rooms has been tested and was found to harbour sheathed larvæ.

The beaches around the town are popular sites for defæcation, there seems to be some doubt as to their infectivity as regards Ankylostome larvæ.

Considering that the rainfall of Zanzibar is about 55 inches a year and the extreme humidity for the greater part of the year, the conditions seem ideal for the development of Ankylostomes. The following experiments were undertaken to test various sites in the neighbourhood of the town as to their infectivity with ripe Ankylostome larvæ.

The apparatus used was that devised by Baermann.

Copper funnels of various sizes were employed. Sieves with a fine mesh lined inside and outside with cloth were fitted into these funnels.

One pound samples of soil were taken and placed in the sieves, water at a temperature of 45 degrees centigrade was run into the funnels until it came into contact with the soil in the sieve. The samples were set up at night; 50 c.c. was removed the next morning and after one hour the liquid was pipetted off to 10 c.c. This 10 c.c. of liquid was examined and counted for the number of sheathed larvæ.

Cultures of fæces heavily infected with Ankylostome ova had been previously strewn on sterile soil and passed through the Baermann apparatus, they were examined on the sixth day. Large numbers of sheathed Ankylostome larvæ were naturally forthcoming; these were studied as to their morphological characteristics and used for comparison with sheathed larvæ obtained from soil samples in the open. The following results were obtained:—

Series No. 1.—All soil samples were collected from open beaches around Zanzibar Town. In the majority of cases the fæces were deposited on pure sea sand which would be covered by high tides. In no case was there any deep shade, the samples taken would be exposed daily to several hours of strong sunshine.

Each sample consisted of one pound taken from sand immediately under semi-dry fæces. From the appearance of the stools they were judged to be about 3 to 5 days old.

It will be seen that 9 out of 14 samples showed sheathed larvæ closely resembling those of human Ankylostomes.

Series No. 2.—Were set up as a control to Series No. 1. The method adopted was to fill some flower pots with one pound of sterile black garden soil and to sow on these pots a rich culture of ripe

Ankylostome larvæ procured from a suitable case of Ankylostomiasis. The method of obtaining these cultures was described on page 56. These flower pot cultures were buried flush at various places on beaches as in Series No. 1 and left exposed to sun, air, and washing of tides for 16 days. After this period they were put through the Baermann apparatus and the larvæ isolated. The following results were obtained:—

Five showed sheathed larvæ, two were negative. In the latter the larvæ were probably washed out of the flower pots by high tides.

Series No. 3.—The same experiments as in Series No. 2, except that in this case the sterile soil used, was obtained in each case from the sites mentioned.

As will be seen from the results in the majority of cases it was sea sand.

All proved positive after burial for 16 days.

Series No. 4 and 5.—The Creek. This tidal inlet divides the European and Indian quarters of Zanzibar from the African Town. The bed of the creek at low water is a mixture of black slime and mud. Many main drains from the town run into this tidal inlet. At high tides the creek is filled: at neap tides only partially. The banks of the creek are favourite sites for defæcation, evidence of gross pollution can be observed at many spots.

The same set of experiments were carried out here, that is to say one series of flower pots containing sterile black garden soil and many ripe Ankylostome larvæ were buried in the creek mud, a further control was made with sterile creek mud and likewise buried at different sites.

All proved negative.

These two experiments are of interest; there is evidently some chemical substance or gas inimical to ripe hookworm larvæ in the creek.

This is fortunate considering that the edges of the creek are favourite defæcating grounds and that on a falling tide or at low water the natives wade across. Many native boys gain a few pence by digging up lug worms for bait in the bed of the creek.

Series No. 6.—Soil samples from various sites in the town including the African quarter of Ngambo.

The specimens were collected only from places showing evidence of extreme pollution. As will be seen in the table, types of soil, shade conditions, etc., varied greatly.

Series No. 7.—Consists of two experiments only.

A rich culture of sheathed hookworm larvæ were placed on sterile soil in a flower pot. This was buried in red earth under the eaves of a native house. It had been previously stated that children defæcated at night under the eaves of houses.

A second culture was put up under the same conditions in the centre of the Recreation Park well exposed to the sun. Slight evidence of soil pollution can always be found on the football ground.

Both proved positive.

SERIES No. 1.

Samples from Various Beaches around Zanzibar Town.

Date.	Number.	Place.	Result.	Remarks.	
26-4-27	1	E.T.C. Bench	Negative	Sea Sand. Area selected covered by sea at high tide. Much evidence of pollution.	
27-4-27	2	Bank India Beach	Positive	Sea sand mixed with muddy slime near outlet of main drain. No shade. Area selected covered by sea water at high tide. Many sheathed larvæ isolated. Much pollution.	
29-4-27	3	French Hospital Beach	Negative	Sea sand only. No shade. Much evidence of pollution. In all probability the faeces were from Europeans as the samples were taken from near the house drain.	
29-4-27	4	Col. Murphy's Beach	Negative	Sea sand only. Taken from end of drain. Much pollution.	
2-5-27	5	Residency Beach	Positive	Sea sand and black soil. Taken from outlet of boys drain. No shade. Covered by sea water at high tide. A few sheathed larvæ found. Three in 10 c.c. Evidence of much pollution.	
2-5-27	6	Residency Beach	Negative	Sea sand and black soil. No shade. Washed by high tides. Under Residency walls. No signs of pollution.	
2-5-27	7	Native Hospital Beach	Positive	Sea sand and muddy slime. No shade. Washed by high tides. Taken at outlet of drain. Much pollution. Two larvæ in 10 c.c.	
5-5-27	8	Oil Pier Beach	Positive	Sand and earth. No shade. Washed at high spring tides. Much evidence of pollution, a public communal defæcating ground. Many sheathed larvæ found.	
6-5-27	9	Oil Pier Beach	Positive	A second sample same as No. 8. Many larvæ found. Fifty in 10 c.c.	
6-5-27	10	Oil Pier Beach	Positive	Sea sand in coral pockets. No shade. Much evidence of pollution. Covered by sea at high water. Twenty sheathed larvæ in 10 c.c.	
9-6-27	11	Mnazi Moja Beach	Negative	Sea sand underneath soil bank. No shade. Much evidence of old and new pollution.	

SERIES No. 1.—(Continued.)

Samples from Various Beaches around Zanzibar Town.

Date.	Number.	Place.	Result.	Remarks.
22-6-27	12	Gulioni Bridge	Positive	Sea sand and loam. Deep shade. Covered by sea water at high tide. Fresh water from surface drains for the greater part of the day. Much evidence of pollution, a favourite defæcating ground. Thirty sheathed larvæ in 10 c.c.
23-6-27	13	Pigaduri Beach	Positive	Sea sand. Fully exposed to sun, no shade. Washed by high tide. Gross pollution in every direction. Thirty-eight larvæ in 10 c.c.
8-7-27	14	Mnazi Moja Beach	Positive	Near European bathing station. Sea sand. No shade. A tidal inlet, filled at high tide with sea water. Gross pollution in every direction.

SERIES No. 2.

Cultures on Sterile Soil in Flower Pots on Various Beaches.

Date.	Number.	Place.	Time exposed.	Remarks.
5-7-27	1	Oil Pier Beach	16 days	Buried on top of beach in sandy soil, washed by high water. Exposed to sun. Result. Positive. Many active sheathed larvæ.
13 7-27	2	India Bank Beach	16 days	Buried on top of beach under old French Hospital. Washed by high tides. Fully exposed to sun.
20-7-27	3	Shangani Beach	16 days	Result. Positive. Many sheathed larvæ all of same morphological appearance. Buried in sea sand. Washed by high tides. Fully exposed to sun.
26-7-27	4	Gulioni Bridge	16 days	Result. Positive. Many sheathed larvæ. Underneath bridge buried in gravelly soil. Deep shade. Trickle of fresh water for most of the day from surface drains. High tide reached and covered culture.
26-7-27	5	Gulioni Beach	16 days	Result. Negative. Probably larvæ were washed out. Buried in sea sand on beach. Fully exposed to sun. Washed by high tides.
2-8-27	6	Dhobie Lines Beach	16 days	Result. Positive. Many sheathed larvæ isolated. In mangrove swamp. Buried in black mud, saturated with sea water. Well shaded by mangrove bushes.
2-8-27	7	Dhobie Lines Beach	16 days	Result. Positive. A few sheathed larvæ found. At side of fresh water stream in mangrove swamp, well exposed to sun. Buried in sand saturated with fresh water at low tide and covered by sea water at high tide.
				Result. Negative. Probably larvæ were washed away.

Series No. 3.

Cultures in Flower Pots Obtained from Various Sites on Various Beaches.

Date.	Number.	Place.	Time exposed.	Remarks.
16-8-27	1	Oil Pier Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 1. Result. Positive. Many active sheathed larvæ.
16-8-27	2	India Bank Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 2. Result. Positive. Few sheathed larvæ.
23-8-27	3	Shangani Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 3. Result. Positive. Many active and sheathed larvæ.
23-8-27	4	Gulioni Bridge	16 days	Sterile gravel. Same conditions as Series 2, No. 4. Result. Positive. Many active and sheathed larvæ.
23-8-27	5	Gulioni Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 5. Result. Positive. Many active and sheathed larvæ.
31-8-27	6	Dhebbie Lines Beach	16 days	Sterile mangrove mud. Same conditions as Series 2, No. 6. Result. Positive. Few sheathed larvæ found.

SERIES No. 4.

Samples from Various Sites in the Creek.

Date.	Number.	Place.	Result.	Remarks.
9-5-27	1	Creek	Negative	At outlet of Public Works drain. Thick oozy black slime in a semi-liquid condition. Around mouth of drain great collections of faeces. Sample taken during neap tides, not covered by sea water.
9-5-27	2	Creek	Negative	At outlet of school drain near large wooden exit flap. Heaps of semi-dry faeces and freshly passed stools on black earth away from sea water.
13-5-27	3	Creek	Negative	One specimen of <i>Trichuris trichuris</i> found and many flagellates.
13-5-27	4	Creek	Negative	At outlet of drain from public latrines. Much evidence of freshly discharged faeces. Soil black slimy ooze. Washed by sea water at high tides.
				On shore beneath public latrine. Much evidence of partially dried faeces. Soil consisted of sand and stone.

SERIES No. 5.

Cultures on Sterile Soil in Flower Pots in the Creek.

Date.	Number.	Place.	Time exposed.	Remarks.
20-7-27	1	Creek	16 days	Same conditions as Series 4, No. 1. Result. Negative.
22-7-27	2	Creek	16 days	Same conditions as Series 4, No. 2. Result. Negative.
22-7-27	3	Creek	16 days	Same conditions as Series 4, No. 3. Result. Negative.
24-7-27	4	Creek	16 days	Same conditions as Series 4, No. 4. Result. Negative.

SERIES No. 6.

Soil Samples from Various Sites in the Town including the African Quarter Ngambo.

Date.	Number.	Place.	Result.	Remarks.
9-6-27	1	Parsee Temple	Positive	In a plantation facing the temple. Shady area covered with bush. Soil sand and humus. Much evidence of pollution old and fresh. Twenty-five sheathed larvæ in 10 c.c.
18-6-27	2	Mianzini River Bed	Positive	In dry river bed, deep shade from trees and bush. Soil sand and humus. Much evidence of pollution old and fresh, some completely disintegrated. Twenty-five sheathed larvæ in 10 c.c.
22-6-27	3	Mlandege	Positive	A small area near the wood market. Soil sand and earth. Partial shade for the greater part of the day. Much evidence of pollution. Nineteen larvæ in 10 c.c.
24-6-27	4	Patel's Shamba	Positive	Opposite Ziwani Swamp No. 2. Deep shade all the day. Soil sand and humus. Little evidence of pollution. Fifteen sheathed larvæ in 10 c.c.
24-6-27	5	Ziwani Shamba	Positive	Orange shamba on the way to Ziwani Lines. Orange trees and deep shade. Light sandy soil covered with grass. Much evidence of pollution. Thirty larvæ in 10 c.c.
28-6-27	6	Malindi Kokoni	Positive	From underneath overhanging defæcating platform. Partial shade. Soil black mud. Washed by high tides. Masses of feces. Uncountable number of sheathed larvæ in 10 c.c.
28-6-27	7	Miafuni Ngambo	Positive	Near Indian Ithnasheri Burial Ground. Partial shade. Soil sand and humus. Little evidence of pollution. Three sheathed larvæ in 10 c.c.
15-7-27	8	Gongoni Ngambo	Positive	Near Comoro Cemetery. Light shade. Soil sand.
22-7-27	9	Shangani	Positive	In a lane leading to the main beach. Sand and rubbish, etc. Partial shade. Much evidence of pollution. Twelve larvæ in 10 c.c.
27-7-27	10	Saatani	Positive	Large dug out area. Soil sand and red clay. Well exposed to sun for the greater part of the day. Much evidence of pollution, a public defæcating ground for the inhabitants of the neighbourhood. Twenty-five sheathed larvæ in 10 c.c.
9-8-27	11	Old Wireless	Positive	In a shamba light sandy soil and deep shade. Much evidence of pollution. Thirty-eight sheathed larvæ in 10 c.c.

Series No. 7.

Cultures on Sterile Soil in Flower Pots.

Date.	Number.	Place.	Time exposed.	Remarks.
2-8-27	1	Kikwajuni	16 days	Buried under eaves of house in red earth. Partial shade for part of the day, at times fully exposed to the sun. Result. Many sheathed larvæ isolated.
2-8-27	2	Recreation Ground	16 days	In centre near goal post. Hard light sandy soil covered with grass. No shade fully exposed to the sun. Result. Very few sheathed larvæ recovered by the isolation apparatus

From these series of experiments it will be seen that sheathed Nematode larvæ can be found in many sites in Zanzibar Town, and that the native unshod population has many chances of coming in contact with ripe larvæ.

The creek as previously stated proved under all experimental conditions negative, the open beaches of sea sand are suspicious.

Two further experiments were undertaken to test the suitability of sea sand and creek mud as a breeding medium for Ankylostome larvæ. Sterile sea sand and creek mud were sown with a rich culture of hookworm larvæ. The cultures were kept in the laboratory and on the 6th day were passed through the Baermann apparatus, many larvæ fully sheathed were isolated.

This proves that sea sand and creek mud in themselves are suitable for rearing hookworm larvæ.

The next question which arose was if the earth topped privies as used by the natives were infected with Ankylostome larvæ.

Deep pits of 8 to 12 feet deep are dug by the natives, on completion they are covered with any convenient earth and rammed tight. A small orifice is left in the centre for defæcating through. A number of these were carefully inspected and attention was paid as to evidence of soiling around the orifice. On few occasions slight traces of fæcal matter was found around the opening and about six inches away on the earth platform. It was stated that this was owing to the carelessness of children.

A number of soil samples were taken from such privies in the native quarter of Ngambo.

Twenty-eight samples were taken from different pits in various districts of Ngambo. The soil was collected from around the orifice. Fifteen showed sheathed larvæ in varying quantities after being passed through the Baermann apparatus.

This shows that such types of privy pits may be a source of infection. When one takes into consideration that these pits are roofed with plaited coconut leaf and surrounded by walls and that after defæcation much water is used for ablution purposes, the conditions as regard to shade and humidity are ideal for hookworm larvæ.

Many natives, who have no privy pits defæcate on ground or in bush in close proximity to their houses, have attached to their compounds a small room which they use for bathing. I was informed that after defæcation they retired to their bathrooms and there carried out around a small tub the necessary cleansing ablutions.

Soil samples were taken from around the tubs. Five bathrooms were tested, the soil was of sandy nature and wet, all showed sheathed hookworm larvæ.

A small series of investigations were also carried out in different parts of the island.

The following results were obtained:—

Kombeni.—A small village in the south of the island. It is on the fringe of the stony wanda country. Some of the huts are situated on heavy red soil, others on rocky coral country. Soil samples from 12 earth-topped privy pits were investigated. Five samples showed sheathed larvæ.

Dunga.—A large scattered village in the centre of the island. Soil heavy, much cultivation and deep shade. Soil samples were taken from twelve earth-topped privies, five showed sheathed larvæ, one in particular showed a large number, thirty-five in 10 c.c.

Chwaka.—A small village on the East Coast. Between the village and the sea-shore there is a long narrow strip of bushed sandy waste. On investigation this area seemed to be a public communal defæcating ground. On all sides and under most of the bushes signs of pollution were noticeable. The soil was of a light sandy texture covered by straggling grass and shady. Twelve samples were selected from various sites, as far as possible from areas in deep shade. The soil was taken from underneath and around fæces judged to be about six days old. All showed sheathed larvæ, some of them heavy infections. This result is of interest, as here one has to deal with a public defæcating ground. The same conditions have not been found elsewhere in Zanzibar. Soil pollution in Chwaka is heavy and concentrated over a small area.

Kizimkazi.—A small village in the extreme south of the Protectorate. Scattered huts built on open wanda country. Around the settlement small patches of cultivation. Most of the inhabitants are fishermen. On enquiry it was stated that the majority of the natives defæcate on the beach. A careful search was made in and around the village, one small area was found showing obvious signs of pollution. Soil light red friable loam in shade. The single sample showed sheathed larvæ.

Ungujaukuu.—A large scattered settlement in the south. Much cultivation and bush. Beach situated a considerable distance from dwellings. All natives asked, admitted to defæcating in the bush. Samples were collected from different sites and mixed. Result, many sheathed larvæ.

It will be noticed that the term sheathed larvæ has been generally used. As to the sheathed larvæ found in various soils samples being the progeny of *A. duodenale* or *N. americanus* seems to be somewhat doubtful.

Material was sent to specialists in England and America. No definite answer was obtainable as to the identity of the larvæ submitted. As mentioned in this report hookworm larvæ were cultured on sterile soil and carefully compared with the wild specimens obtained from soil cultures.

CONCLUSIONS.

1. The incidence of Ankylostomiasis in the Protectorate by smear and flotation methods is 93%.
2. The average number of ova per gramme for all groups of natives investigated is between 3,000—4,000. This indicates about 14 worms per person.
3. That generally persons showing over 10,000 ova per gramme reveal clinical symptoms.
4. That perhaps the local native has attained some sort of natural immunity.
5. That soil pollution is rife throughout the Protectorate.
6. That sea beaches, such favourite sites for defæcation, are probably infective.
7. That privy pits constructed with earth tops are infective.
8. That the Creek for some unknown reason is not infective.
9. That in the majority of cases the natives do not make use of communal defæcating grounds, so that soil pollution is very scattered.

Ankylostomiasis of Dogs.—*A. caninum* and *A. brasiliense* are extremely common in dogs.

Many dogs killed by the Health Authorities were examined and hookworms collected.

No records have been obtained of these parasites occurring in man. Over 1,000 human hookworms were obtained by washing stools and from post-mortems, all of which proved to be *A. duodenale* or *N. americanus*.

Ascariasis.—*Ascaris lumbricoides* is a common parasite and prevalent throughout the Protectorate. Some curious factors which are at present unexplainable as to the intensity of infection in some villages and very slight infestation in others have come to light. Two hundred and seventy-five stools were examined, 67 showed *Ascarid* ova=24.7%. Certain villages in the south of the island show an infection rate of nearly 90%.

The climate of the south is much drier than that of the north and high winds are prevalent. The villages are supplied with deep wells. All those which I examined had good protecting coping walls about two feet high. It seemed improbable that much faecal contamination of drinking water was taking place.

That washing in water, which is subsequently used for drinking, is one important factor is unquestionable, and one would expect to find a high incidence where the drinking water is much polluted. It may be possible that owing to the dryness of the climate in the south that eggs after complete dessication of the faeces are blown on to food.

On enquiry and by personal observation it is well-known that dogs are prone to devour human fæces, this may help in the general dissemination of *Ascarid* ova.

Cattle should also be considered. I have never seen them actually devouring fæces, but as they gain their nourishment solely by grazing they must at times ingest *Ascarid* and *Ankylostome* ova.

Ascarids from other Sources than Man.—Domesticated pigs are scarce in Zanzibar; there are a few piggeries near the town owned by Goans. The stomachs and intestines of some of them were examined but no *Ascarids* were found.

Wild bush pigs are extremely common throughout the Protectorate, whether they act as hosts for *A. lumbricoides* is unknown to me. I take *A. suilla* to be synonym for *A. lumbricoides*. One post-mortem was performed with a negative result. It is intended later to have the fæces of wild pigs collected and examined for *Ascarid* ova.

Trichuriasis.—*Trichuris trichura* is one of the commonest parasites of man in Zanzibar.

Two hundred and eighty-three stools were examined, 196 showed ova of *Trichuris*=72.1%. The way of infection is presumably the same as that of *A. lumbricoides*.

Tæniasis.—Is practically unknown. A few natives from the mainland have been found infected with *T. saginata*, owing probably to the fact of eating raw or improperly cooked meat. The natives of Zanzibar eat little meat and when used is cut into small pieces and thoroughly cooked.

The Veterinary Division condemns a number of cattle carcasses annually for infection with *Cysticercus bovis*. The cattle are imported from the mainland; local animals, as far as is known, are not infected.

Bilharziasis.—*Schistosomum hæmatobium*. This parasite has been proved to be far commoner than previously thought. The following records have been obtained:—

Total number of school children examined ...	287
Total number showing ova in urine ...	34=11.9%

The following statistics show the infection rate for the various schools examined:—

MWERA SCHOOL.

Number examined ...	40
Number positive ...	6=15%

The average age of the children was about 8 years. All of them admitted to bathing in the Mweru River and adjacent swamps in the district.

MANGAPWANI SCHOOL

Number examined	... 43
Number positive	... 5 = 11%

Mangapwani is a well-watered district, swamps and rivers are abundant. All children admitted to bathing in fresh water.

NDIJANI SCHOOL.

Number examined	... 46
Number positive	... 9 = 19%

Ndijani is situated in the centre of the island. There are no swamps or rivers in the proximity of the school. A few of the boys admitted to bathing in swamps at Ubago and Chejuu, both about 8 miles distant from the school.

MKOKOTONI SCHOOL

Number examined	... 36
Number positive	... 7 = 19%

Mkokotoni is a well-watered district, swamps and rivers are a feature of the countryside.

KIUNGANI SCHOOL.

Number examined	... 51
Number positive	... 4 = 7.8%

The school is situated near Zanzibar town and is under the control of "The Universities Mission to Central Africa". Many of the boys came from the Mainland. The pupils said they always bathed in the sea. Those infected probably contracted the disease on the Mainland.

KIZIMKAZI SCHOOL.

Number examined	... 71
Number positive	... 3 = 4.2%

In Kizimkazi there are no rivers or swamps. The boys showing infection had spent their holidays at Mtende. In Mtende there are a series of swamps which are permanent for the greater part of the year.

These records show that the local inhabitants of the island are infected with Schistomysomiasis. It also proves that the infection was gained locally. The majority of the school children examined had never been out of the island.

A number of urines were sent in from various hospitals, dispensaries, institutions, etc. They were clinically suspicious of Bilharziasis.

Total number examined	... 50
Total number positive	... 33=66%

The majority were adult males and represent all types of natives both from Zanzibar and the Mainland.

THE INTERMEDIATE HOST OF SCHISTOSOMUM HÆMATOBIUM.

The following Molluscs have been recorded from the Protectorate:—

1. <i>Bulinus forskali</i>	8. <i>Succinea concisa</i>
2. <i>Planorbis gibbonsi</i>	9. <i>Isodora ovoidea</i>
3. <i>Cleopatra ferruginea</i>	10. <i>Lanistes purpureus</i>
4. <i>Melanoides tuberculatus</i>	11. <i>Ureodoxis gagates</i>
5. <i>Cerithidea decollata</i>	12. <i>Meladomus olivaceus</i>
6. <i>Theodoxus natalensis</i>	13. <i>Melania amarula</i>
7. <i>Limnæa caillaudi</i>	14. <i>Ampullaria gradata</i>

Only two of these come under suspicion namely *Isodora ovoidea* and *Planorbis gibbonsi*.

Long series of dissections were made of *Isodora ovoidea* found in ponds and swamps from various parts of the island.

Number dissected	... 249
Positive for Cercariæ	... 9

Snails were dissected regularly from May to December to study the seasonal incidence.

Isodora ovoidea was also found to harbour the Cercariæ of some unknown Trematode.

In the nine infected snails, the cercariæ had all the morphological characteristics of *S. hæmatobium*.

EXPERIMENTS UNDERTAKEN TO TRY AND INFECT ISODORA OVOIDEA WITH THE MIRACIDIA OF SCHISTOSOMUM HÆMATOBIUM.

Numbers of *Isodora ovoidea* were collected from two ponds at Marahubi Gardens. As these ponds are used for ornamental purposes and are constructed of cement, it was thought that they would not be accidentally infected. One hundred of them were dissected; none showed Cercariæ. Specimens of *Isodora ovoidea* from these ponds were isolated in small aquaria and large test tubes. Infective urine

rich in ova of *S. hæmatobium* was added. They were dissected regularly from the sixth to the thirtieth day. No *Cercariæ* were recovered. In some instances the ova were first hatched in an incubator and the resulting active *Miracidia* were added to the aquaria, no definite results were obtained.

From these findings it will be seen that there is still some doubt as to *Isodora ovoidea* being the definite intermediate host of *Schistosomum hæmatobium*.

THE BIONOMICS AND DISTRIBUTION OF *ISODORA OVOIDEA* IN ZANZIBAR.

This mollusc has been found in most of the swamps and ponds in the island. It has no marked preference for certain types of water or aquatic flora. They are generally found in abundance on the underside of waterlily leaves and attached to the stems of a species of *Papyrus*. At times, when in profusion, they attach themselves to any driftwood or convenient foliage. I have never found them in rivers or swiftly moving water. At certain seasons they are very abundant generally in the cold weather, the same swamp revisited after a few months in the hot season was practically negative. They have been found in every part of the Protectorate.

CONCLUSIONS.

1. That Schistosomiasis (*S. Hæmatobium*) is common in the Island.
2. That the disease is locally contracted.
3. That in all probability *Isodora ovoidea* is the intermediate host of *Schistosomum hæmatobium*.

RECOMMENDATIONS.

1. Destruction of the adult worms in man by means of suitable drugs.
2. Destruction of the intermediary Mollusc by chemicals such as Copper Sulphate. Clearing of favourite food plants from swamps. Encourage the natives to keep ducks, they are known to feed with avidity on Molluscs.
3. Propaganda. Short concise pamphlets dealing with the disease and its etiology. The danger of bathing and washing clothes in swamps should be stressed.

Schistosomiasis due to Schistosomum Mansoni.—Two cases out of 275 faecal examinations showed lateral spined ova. Both patients came from the mainland and were not suspected of rectal Bilharziasis. As will be seen from the list of indigenous Molluscs only one species of *Planorbis* has been found.

Planorbis gibbonsi is a very small species and has a restricted range in the Protectorate.

Fleas.—A survey was started in 1927 to ascertain the species of the common rat fleas and their monthly incidence. The following results were obtained and tabulated monthly.

FLEA RECORDS. JULY 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
11-7-27	<i>E. norvegicus</i>	Shangani	5	0	0	5
20-7-27	<i>R. rattus</i>	Miembene	0	0	1	1
20-7-27	<i>R. rattus</i>	Baghani	17	0	0	17
21-7-27	<i>R. rattus</i>	Mkunazini	3	0	0	3
21-7-27	<i>E. norvegicus</i>	Vuga	0	0	1	1
22-7-27	<i>R. rattus</i>	Gongoni	0	0	4	4
22-7-27	<i>E. norvegicus</i>	Shangani	11	0	0	11
23-7-27	<i>R. rattus</i>	Shangani	6	0	0	6
23-7-27	<i>R. rattus</i>	E. Club	3	0	0	3
23-7-27	<i>Pachyura</i>	Vuga	0	0	3	3
23-7-27	<i>R. rattus</i>	Shangani	0	0	3	3
25-7-27	<i>E. norvegicus</i>	Ngambo	0	0	1	1
25-7-27	<i>R. rattus</i>	Ngambo	1	0	1	2
27-7-27	<i>R. rattus</i>	Vuga	4	0	1	5
27-7-27	<i>E. norvegicus</i>	Shangani	11	0	0	11
28-7-27	<i>E. norvegicus</i>	Market	2	0	0	2
28-7-27	<i>R. rattus</i>	Shangani	12	0	0	12
29-7-27	<i>R. rattus</i>	Baghani	7	0	0	7
30-7-27	<i>E. norvegicus</i>	Shangani	1	0	0	1
Total			83	0	15	98

Total number of Rats	...	19
Total number of <i>E. norvegicus</i>	...	7
Total number of <i>R. rattus</i>	...	11
Total others	...	1
Total number of Cheopis on Rattus	...	53
Total number of Brasiliensis on Rattus	...	10
Total number of Cheopis on Norvegicus	...	30
Total number of Brasiliensis on Norvegicus...	...	2
Average number of fleas per rat for July	...	5

FLEA RECORDS. AUGUST 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
1-8-27	<i>E. norvegicus</i>	Kikwajuni	6	0	0	6
2-8-27	<i>R. rattus</i>	Kikwajuni	6	0	0	6
4-8-27	<i>R. rattus</i>	Mkunazini	6	0	0	6
5-8-27	<i>E. norvegicus</i>	Mkunazini	8	0	0	8
6-8-27	<i>E. norvegicus</i>	Sokomohogo	13	0	0	13
6-8-27	<i>E. norvegicus</i>	Shangani	8	0	0	8
8-8-27	<i>E. norvegicus</i>	Sokomohogo	10	0	0	10
9-8-27	<i>E. norvegicus</i>	Kikwajuni	0	0	1	1
9-8-27	<i>E. norvegicus</i>	Sokomohogo	5	0	3	8
10-8-27	<i>R. rattus</i>	Kikwajuni	5	0	3	8
10-8-27	<i>E. norvegicus</i>	Kibokoni	4	0	0	4
11-8-27	<i>R. rattus</i>	Malindi	0	0	3	3
11-8-27	<i>R. rattus</i>	Kikwajuni	1	0	2	3
12-8-27	<i>R. rattus</i>	Kisinamajongo	1	0	5	6
12-8-27	<i>R. rattus</i>	Sokohomogo	29	0	5	34
15-8-27	<i>E. norvegicus</i>	Kikwajuni	3	0	1	4
15-8-27	<i>E. norvegicus</i>	Mji Mpia	1	0	0	1
16-8-27	<i>E. norvegicus</i>	Mkunazini	2	0	2	4
17-8-27	<i>R. rattus</i>	Kikwajuni	0	0	1	1
17-8-27	<i>E. norvegicus</i>	Mkunazini	10	0	0	10
19-8-27	<i>E. norvegicus</i>	Kibokoni	1	0	4	5
19-8-27	<i>E. norvegicus</i>	Native Hospital	6	0	0	6
22-8-27	<i>R. rattus</i>	Vuga	8	0	6	14
24-8-27	<i>E. norvegicus</i>	Kajificheni	0	0	0	0
24-8-27	<i>E. norvegicus</i>	Miembeni	0	0	0	0
25-8-27	<i>E. norvegicus</i>	Mwembeladu	0	0	1	1
26-8-27	<i>E. norvegicus</i>	Sokohomogo	0	0	0	0
26-8-27	<i>E. norvegicus</i>	Ngambo	0	0	5	5
30-8-27	<i>E. norvegicus</i>	Old Jail	4	0	1	5
30-8-27	<i>E. norvegicus</i>	Gongoni	0	0	0	0
31-8-27	<i>E. norvegicus</i>	Old Jail	9	0	0	9
31-8-27	<i>E. norvegicus</i>	Kibokoni	0	0	1	1
31-8-27	<i>E. norvegicus</i>	Old Jail	3	0	1	4

Total	149	0	42	191
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Total number of Rats	...	33
Total number of <i>E. norvegicus</i>	...	24
Total number of <i>R. rattus</i>	...	9
Total number of Cheopis on Rattus	...	56
Total number of Brasiliensis on Rattus	...	25
Total number of Cheopis on Norvegicus	...	93
Total number of Brasiliensis on Norvegicus	...	17
Average number of fleas per rat	...	5.7

FLEA RECORDS. SEPTEMBER 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
1-9-27	E. norvegicus	Mkunazini	7	0	2	9
1-9-27	E. norvegicus	Kikwajuni	0	0	1	1
2-9-27	R. rattus	Kisimamajongo	0	0	2	2
2-9-27	E. norvegicus	Mkunazini	5	0	1	6
5-9-27	E. norvegicus	Mkunazini	15	0	0	15
5-9-27	E. norvegicus	Old Jail	0	0	2	2
6-9-27	R. rattus	Kiponda	2	0	0	2
6-9-27	E. norvegicus	Mwembe Tanga	2	0	41	43
7-9-27	R. rattus	Changa Bazaar	5	0	0	5
7-9-27	E. norvegicus	Kikwajuni	0	0	1	1
8-9-27	R. rattus	Hurumzi	1	0	0	1
8-9-27	E. norvegicus	Kikwajuni	0	0	1	1
9-9-27	E. norvegicus	Old Jail	7	0	0	7
9-9-27	R. rattus	Mkunazini	10	0	2	12
10-9-27	E. norvegicus	Hospital	1	0	7	8
10-9-27	E. norvegicus	Kajificheni	4	0	0	4
12-9-27	E. norvegicus	Kajificheni	14	0	0	14
12-9-27	E. norvegicus	Old Jail	23	0	0	23
16-9-27	E. norvegicus	Mwembe Tanga	0	0	5	5
17-9-27	E. norvegicus	Kibokoni	1	0	2	3
19-9-27	R. rattus	Yuga	0	0	1	1
20-9-27	E. norvegicus	Mkunazini	0	0	0	0
20-9-27	E. norvegicus	Shangani	1	0	0	1
21-9-27	E. norvegicus	Kibokoni	2	0	6	8
21-9-27	E. norvegicus	Kibokoni	13	0	1	14
22-9-27	E. norvegicus	Mkunazini	8	0	2	10
22-9-27	E. norvegicus	Kikwajuni	0	0	0	0
23-9-27	R. rattus	Malindi	16	0	1	17
24-9-27	E. norvegicus	Mkunazini	0	0	7	7
24-9-27	E. norvegicus	Mkunazini	10	0	0	10
26-9-27	E. norvegicus	Kikwajuni	0	0	0	0
27-9-27	R. rattus	Sokomohogo	16	0	4	20
27-9-27	E. norvegicus	Sokomohogo	0	0	3	3
28-9-27	E. norvegicus	Mwembeladu	3	4	0	7
29-9-27	R. rattus	Sokomohogo	4	0	5	9
30-9-27	E. norvegicus	Kiponda	14	0	1	15
30-9-27	E. norvegicus	Kidutani	0	0	4	4
Total			184	4	102	290

Total number of Rats	...	37
Total number of E. norvegicus	...	28
Total number of R. rattus	...	9
Total number of Cheopis on Rattus	...	54
Total number of Brasiliensis on Rattus	...	15
Total number of Cheopis on Norvegicus	...	130
Total number of Brasiliensis on Norvegicus...	...	86
Total number of Astia on Norvegicus	...	4
Average number of fleas per rat	...	7.9

FLEA RECORDS. OCTOBER 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
3-10-27	E. norvegicus	Kikwajuni	0	0	1	1
5-10-27	R. rattus	Sokomohogo	2	0	0	2
6-10-27	E. norvegicus	Mwembe Tanga	1	0	0	1
7-10-27	R. rattus	Kisiwandui	1	0	0	1
7-10-27	R. rattus	Kikwajuni	4	0	3	7
8-10-27	E. norvegicus	Sokomohogo	5	0	0	5
10-10-27	E. norvegicus	Baghani	4	0	0	4
12-10-27	E. norvegicus	Changa Bazaar	11	0	0	11
12-10-27	E. norvegicus	Kikwajuni	2	0	0	2
13-10-27	E. norvegicus	Mbuyuni	1	0	0	1
14-10-27	R. rattus	Hamman	3	0	9	12
17-10-27	E. norvegicus	Mlandege	13	0	0	13
18-10-27	E. norvegicus	Kikwajuni	1	0	3	4
19-10-27	E. norvegicus	Mkunazini	0	0	2	2
19-10-27	E. norvegicus	Kikwajuni	0	0	6	6
20-10-27	R. rattus	Kikwajuni	2	0	3	5
20-10-27	R. rattus	Chambawima	0	0	1	1
21-10-27	R. rattus	Kisiwandui	0	0	3	3
22-10-27	E. norvegicus	Mkunazini	0	0	1	1
25-10-27	R. rattus	Kisiwandui	0	0	1	1
26-10-27	R. rattus	Miembeni	1	0	0	1
26-10-27	E. norvegicus	Sokomohogo	12	0	0	12
27-10-27	R. rattus	Kikwajuni	0	0	1	1
28-10-27	E. norvegicus	Kajificheni	2	0	1	3
Total			65	0	35	100

Total number of Rats	...	24
Total number of E. norvegicus	...	14
Total number of R. rattus	...	10
Total number of Cheopis on Rattus	...	12
Total number of Cheopis on Norvegicus	...	52
Total number of Brasiliensis on Rattus	...	23
Total number of Brasiliensis on Norvegicus	...	13
Average number of fleas per rat	...	4

FLEA RECORDS. NOVEMBER 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
3-11-27	E. norvegicus	Kajificheni	2	0	0	2
4-11-27	E. norvegicus	Kikwajuni	0	0	9	9
4-11-27	E. norvegicus	Changa Bazaar	2	0	4	6
7-11-27	E. norvegicus	Mkunazini	2	0	0	2
7-11-27	E. norvegicus	Vikokotoni	25	0	11	36
7-11-27	E. norvegicus	Kajificheni	1	0	0	1
9-11-27	R. rattus	Mkunazini	0	0	9	9
10-11-27	R. rattus	Kikwajuni	9	0	3	12
11-11-27	E. norvegicus	Baghani	76	0	3	79
12-11-27	R. rattus	Darajani	4	0	0	4
12-11-27	E. norvegicus	Mkunazini	6	0	0	6
14-11-27	R. rattus	Kiponda	6	0	0	6
16-11-27	E. norvegicus	Baghani	9	0	0	9
17-11-27	R. rattus	Changa Bazaar	9	0	0	9
19-11-27	R. rattus	Kiponda	13	0	0	13
21-11-27	R. rattus	Kikwajuni	0	0	0	0
23-11-27	R. rattus	Mkunazini	5	0	0	5
23-11-27	R. rattus	Ziwani	0	0	6	6
24-11-27	R. rattus	Kikwajuni	1	0	0	1
26-11-27	R. rattus	Kibokoni	2	0	2	4
29-11-27	R. rattus	Bibi Joka	3	0	1	4
Total			175	0	48	223

Total number of Rats	...	21
Total number of E. norvegicus	...	9
Total number of R. rattus	...	12
Total number of Cheopis on Rattus	...	52
Total number of Cheopis on Norvegicus	...	123
Total number of Brasiliensis on Rattus	...	21
Total number of Brasiliensis on Norvegicus	...	27
Average number of fleas per rat	...	15.7

FLEA RECORDS. DECEMBER 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
2-12-27	<i>R. rattus</i>	Mchambawima	3	0	0	3
5-12-27	<i>E. norvegicus</i>	Mwembe Tanga	1	0	12	13
6-12-27	<i>R. rattus</i>	Sokomohogo	1	0	0	1
7-12-27	<i>E. norvegicus</i>	Miembeni	2	0	4	6
8-12-27	<i>E. norvegicus</i>	Kikwajuni	0	0	5	5
8-12-27	<i>R. rattus</i>	Africa Hotel	2	0	0	2
8-12-27	<i>R. rattus</i>	Shangani	3	0	0	3
12-12-27	<i>E. norvegicus</i>	Miembeni	2	0	1	3
12-12-27	<i>E. norvegicus</i>	Shangani	3	0	0	3
13-12-27	<i>E. norvegicus</i>	Mchambawima	4	0	0	4
16-12-27	<i>E. norvegicus</i>	Changa Bazaar	1	0	1	2
17-12-27	<i>R. rattus</i>	Mlandege	1	0	4	5
17-12-27	<i>R. rattus</i>	Kisiwandui	0	0	5	5
19-12-27	<i>E. norvegicus</i>	Kajificheni	5	0	9	14
19-12-27	<i>E. norvegicus</i>	Changa Bazaar	6	0	0	6
20-12-27	<i>R. rattus</i>	Kikwajuni	2	0	5	7
21-12-27	<i>E. norvegicus</i>	Kibokoni	3	0	3	6
		Total	39	0	49	88

Total number of Rats	...	17
Total number of <i>E. norvegicus</i>	...	10
Total number of <i>R. rattus</i>	...	7
Total number of Cheopis on Rattus	...	12
Total number of Cheopis on Norvegicus	...	27
Total number of Brasiliensis on Rattus	...	14
Total number of Brasiliensis on Norvegicus	...	39
Average number of fleas per rat	...	5.2

These findings show that *Xenopsylla cheopis* is the commonest species of flea on all rats, *Xenopsylla brasiliensis* is also captured frequently, *Xenopsylla astia* is extremely rare. *Xenopsylla crinita* has been recorded from *Cricetomys gambianus*. Other fleas recorded from the common town rats are *Echidnophaga gallinaceus* and *Ctenocephalus felis*. These latter not being concerned in the dissemination of plague have not been inserted in the tables.

The following rodents captured in the town have been identified:—

1. *Rattus rattus rattus*.
2. *Rattus rattus frugivorus*.
3. *Rattus norvegicus*.
4. *Epimys hibernicus*. A melanotic form of *Rattus norvegicus*.
5. *Cricetomys gambianus*.

The Insectivore *Pachyura cærulea* is often trapped in the town, it is a host of *Xenopsylla cheopis*.

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(b) BACTERIOLOGICAL AND PUBLIC HEALTH
LABORATORIES.

The work being done in the laboratory is growing steadily in amount. The number of examinations made this year shows an increase of more than two thousand over 1926 and more than five thousand over each of the years 1924 and 1925. The only limit to the amount that can be done is the difficulty in finding the time (and money) to do it. There is no doubt that the material available is more than sufficient to justify the employment of a whole time European Officer, but even with two Sanitation Officers in addition to the Director of Medical and Sanitary Services it is impossible for either to give as much attention to the laboratory as it deserves without neglecting other work.

The water supply at Bububu was examined monthly, and towards the end of the year, showed an improvement in quality as judged by the decrease in sugar-fermenting bacteria. About the middle of the year a barrier of wooden piles had been driven in so as to encircle the conduits from the springs, with the idea of preventing contamination with surface water, and this was no doubt responsible for the improvement in quality.

Blood films of 1,170 children were examined as part of the routine examination in the School Clinic and of these 162 or 13.8% were found to be positive for malaria parasites.

Widal reactions showed an increase of 16 over last year, the majority being for paratyphoid B. These figures should not be taken as an indication of the incidence of the disease in the town as all were single examinations and in no case was a series of examinations asked for, by which alone, on a rising titre, can a diagnosis of active disease be made. A single positive Widal only indicates that the individual, (a) has been inoculated, (b) has had the disease previously, (c) is suffering from the disease. It is therefore, only by a series of examinations at definite intervals that (a) and (b) can be ruled out.

All Police cases, generally examinations for blood or spermatozoa and of which 29 were submitted during the year, are conducted by a Sanitation Officer personally.

J. M. SEMPLE,
*Acting Deputy Director of Sanitary Services,
Zanzibar Protectorate.*

Bacteriological Laboratory Return for the year 1927.

RAT EXAMINATION.			VACCINES.		CHEMICAL.	
Total:—4405.			Pos.	Neg.	Total:—8.	Total:—235.
B. Pestis			0	4405	Number.	Number.
Miscellaneous.						
Total:—194.						
Smear from Ulcer for <i>Spirillocha pallida</i>	...	...	25	133	Staphylococci & Streptococci	Fresh Milk
" " " " Ducrey's Bacilli	...	...	1	0	Gonococci	Condensed Milk
Micrococcus catarrhalis, Spore bearing bacilli and Gram Positive Spirillum...	...	...	1	0	B. coli	Water
Smear from Penis, Staphylococci	...	...	1	0	Pyorrhea	Food-Stuffs
Stomach contents for free Hydrochloric Acid	...	...	1	0	Others	Legal cases
Stomach contents for Combined Acid	...	...	1	0		Invoices
Fluid from Sinus for Bile	...	...	1	0		Ghee
" " " " Micro-organisms	...	...	0	1		Fresh Butter
Pus from Abscess	...	...	0	3		Sulphuric Acid
" " " " Gland for T. B.	...	...	0	1		
" " " " Smear for Staphylococci etc.	...	...	1	0		
Eye discharge for Gonococci	...	...	0	1		
" " " " Koch Week's Bacilli	...	...	0	1		
Anal discharge for Human Spermatozoa	...	...	0	1		
Fluid for Fungi and Staphylococci	...	...	0	1		
Throat Swab for Fungi	...	...	1	0		
" " " " B. diphtheria	...	...	0	2		
" " " " Vincent's Angina	...	...	0	2		
Fluid from Knee joint: Staphylococci and Streptococci	...	...	2	1		
Cerebro Spinal Fluid for Lymphocytes etc.	...	...	3	0		
Smear from Ear discharge: Staphylococci and Grampositive Diplococci	...	...	1	0		
Smear from Ulcer Epithelial Lymphangitis	...	...	0	1		
Scraping from Ulcer: Staphylococci, B. pyocyaneus and Gram pos. Diplococci	...	...	2	0		
Breast Milk for General Examination	...	...	1	0		
Breast Milk for Staphylococci and Streptococci	...	...	1	0		
Cultural Examinations:-	...	...		
Throat Swab for General Examination	...	...	1	0		
Pus for B. typhosus	...	...	0	1		
Discharge from teeth Staphylococci, Streptococci & Micrococcus catarrhalis	...	...	1	0		
					Number.	Total:—12,936.
					Pathological Examination of Tissues Total:—5.	
					Malignant Simple	
					4	
					1	

Bacteriological Laboratory Return for the year 1927.

BLOOD.			SPUTUM.		URINE.		
Total:—5098.	Positive.	Negative.	Total: 413.	Positive.	Negative.	Total: 1150.	
Trypanosomes	0	2	Tubercle Bacilli	99	289	Sugar	...
Sugar estimation	3	0	Pneumococci	12	2	Albumin	...
Cul. Exam. for Staphylococci and Streptococci	0	1	Micrococcus catarrhalis	4	0	Casts	...
Filaria	24	68	Spirochaeta bronchialis	5	0	Bilharzia	...
Spirochaeta obermeyer	2	0	Micro-filariae	1	0	Urea	...
Kala azar	0	1	Staphylococci	1	0	General Examination	...
Haemoglobin, Colour Index	2	0	Favus.			Bile	...
Haemoglobin	39	0	Total:—1,371.	P ₀	N ₀	Uric Acid	...
Red Cells Count	59	0	Amoebae	13	91	Chyle	...
Differential Counts	68	0	(E. histolytica)	847	296	Gonococci	...
White Cells Count	21	0	(A. coli)	59	12	Spermatozoa	...
Widal's test:—			Ankylostoma	2		Diazo Reaction	...
B. typhosus	3	36	Ascariis	1	0	Leptospira Hebdomadalis	...
B. paratyphosus A	1		Tania	1	0	Phosphates	...
B. B.	26		Giardia Intestinalis	4	0	Pus Cells	...
Wassermann's reaction	82	67	Bilharzia	1	0	Cul. Exam. B. coli	...
Pernicious Anaemia	1	0	Tricocephalus dispar	3	0	" " B. typhosus	...
			Blood	0	2	" " B. tuberculosus	...
Un-defined	S. T.	B. T.	Cul. Exam. B. dysentery (Shiga)	4	15	Nasal Secretions.	
			" B. typhosus (Flexner)	3	18	Total:—57.	
Malaria	449	691	Chemical Examination	1	0	B. leprae	52

*This number includes the routine examination of School Children 1170, out of which number 152 were Positive but Undefined Parasites and 1008 were Negative.

(c) INTERESTING CASES.

BY DR. W. A. YOUNG, M.A., M.B. OXON.

1. TWO CASES OF EXTRA PERITONEAL ABSCESS ATTRIBUTED TO FILARIASIS.

The Deep Filarial Abscess a few years ago was one of the commonest conditions necessitating operative treatment, more particularly in Zanzibar than in Pemba, but during the year 1927 it has been less frequently encountered in Zanzibar Native Hospital.

The following two cases, however, assumed to be of this nature, serve to shew what may be the immensity of this trouble, termed merely "Abscess" and are moreover curious for their extra peritoneal burrowing in the abdominal wall.

Case A. Male, age 30 years.—Three months history of fever, illness and pain in right iliac fossa. Tongue clean. Temperature 101°. Pulse fair. Nothing abnormal found in heart, lungs or abdomen except resistance in right iliac fossa where a tumour of indefinite limits in the abdominal wall, but not noticeably bulging the same, seemed to extend from harder, enlarged, matted lymph glands above Poupart's Ligament, indefinitely down into the pelvis. Nothing abnormal about external genitals. No septic spots on legs. Blood films at 8 p.m. shewed no microfilariæ. Trace of albumen present in urine. Ova of *Ankylostoma* found in stools.

Operation.—Incision just a little further out and lower down than MacBurney's for Appendicectomy. External oblique tendon divided in the line of its fibres and internal oblique at right angles to this incision. Into the lateral side of this incision a sort of wall of the tumour seemed to bulge, but the limits downward of this wall could not be traced. The Peritoneal cavity was still intact. The wall of the tumour was incised and proved to be quarter of an inch thick. It was opened the full length of the original incision and from the cavity within were evacuated several pints of creamy pus, a sample of which was taken for culture by the Health Office Laboratory. Exploration of the abscess cavity proved it to extend widely in the pelvis, outside the peritoneum. Burrowing extra peritoneally, it exposed to palpation not only the upper part of the pelvis but the pelvic brim and the true pelvis and actually had raised the external iliac artery up from the floor. This artery was in fact traced from Poupart's Ligament, one quarter of an inch from the lower end of the incision over the anterior and medial wall of the abscess cavity to the inner and upper limit of the cavity where its roof met the spine. Here the internal iliac could be felt taking off from the common iliac and passing down into the pelvis in the floor of the cavity.

No tube was inserted in view of the proximity of the large vessels. Dry dressings were applied to the open wound. Each day for a fortnight the cavity was reopened and emptied with the gloved hand and dressed with aseptic precautions, the walls being allowed to fall gradually together from within towards the surface. Within 33 days the wound had completely healed.

The pus taken at operation proved completely sterile.

Case B. Female 31 years.—History of illness for many weeks. Anæmia intense and general condition very bad. Temperature 99° and pulse rate 146. No organic disease in heart or lung or abdomen. Striæ of former pregnancy present. Right thigh absolutely fixed, or held, in 30° of flexion and also abducted, slight œdema of right foot and fullness about right hip joint where skin shewed native needling marks, but where no heat or tenderness could be detected. No arthritic grating in other joints. Teeth perfect. No gonnorrhœal discharge. Ova of ankylostoma present in stools. Blood shewed no parasites, Polymorphonuclears 62, Lymphocytes 36, Eosinophils 2.

On the day after admission patient shewed very severe signs of collapse. The pulse was barely distinguishable at the wrist. There was slight twitching of eyelids and fingers. Dyspnœa became extreme but nothing could be heard in the chest except harsh breath sounds. The pupils reacted and were equal.

The next day the patient was better and ran a temperature of 102° . Heat and fullness became evident in right groin and front aspect of thigh.

Operation on 4th day.—An incision in the thigh vertically below the right anterior superior Iliac Spine down among the muscles to the femur failed to disclose pus and was closed. Another incision just laterally to McBurney's appendicectomy incision, through external and internal oblique muscles, outside the peritoneum, evacuated several pints of creamy pus.

The abscess cavity extended all over the pelvis, true and false, outside and below the peritoneum. No drain was inserted as the external iliac artery was exposed in the cavity. The wound was left open and dressed with dry dressings.

At 9-45 p.m. that night the patient's temperature rose to 105° . Subcutaneous salines were being administered. The patient was incontinent.

On the following day the patient's condition was rather better. The cavity was gently cleaned out with the gloved finger. Subcutaneous Salines were continued.

On the next day the patient had a second attack of dyspnœa with prolonged respiratory sounds, sibilant rales and inaudible heart sounds.

On the 7th day, 3 days after operation, the relatives including case A, who was now found to be case B's husband, insisted on taking the patient home lest she died in Hospital. A week or so later I was informed she was still alive and getting better.

2. NOTE ON THE PREVALENCE OF CERTAIN CLINICAL SIGNS AND SYMPTOMS IN HOSPITAL IN-PATIENTS.

Statistics of admissions to Hospital are based on single term diagnoses and must be supplemented by generous records on our individual in-patient case sheets if we are not to cover up the very objective clinical material we are so anxious to sort out. From the in-patient records of the 550 patients admitted to the Zanzibar Native Hospital during the last 5 months of the year 1927, it appears that the following signs or symptoms were noted in the course of the examination of these patients in the percentages below:—

Anæmia (of obvious degree as judged from conjunctive and mucous membranes ...	8 %
Jaundice (similarly judged) ...	1½ %
Papular or Papulo-pustular condition of the skin (probably mostly mycotic in origin: occurs under "Scabies" or "Pustular dermatitis in out-patient Returns) ...	2½ %
Mottling of the skin ...	2 %
Areas of thickened skin ...	1½ %
Onychia ...	½ %
Native needling marks (probably by no means all recorded) ...	1½ %
Native burning marks ...	1 %
Deformities (e.g., equinovarus, hair lip, ankylosed joints, but exclusive of lost digits) ...	2 %
Groin Adenitis ...	5 %
Other Adenitis ...	1 %
	<hr/> 6 %
Bubo (Venereal) ...	1 %
Soft Chancre ...	2½ %
Penile Scars (probably not all noted) ...	2 %
Urethral discharge (possible not all slighter degrees noted) ...	7 %
Pyrrhœa ...	2½ %
Enlarged Tonsils, less than ...	1 %
Oedema (of fairly obvious degree) ...	4 %
Ascites ...	1 %
Hæmorrhoids ...	3 %
Enlargement of spleen (sufficient to be noted on palpation ...	8 %
Enlargement of Liver ...	5 %
Increase in area of cardiac dulness ...	5 %
Abnormal cardiac rhythm... ..	2 %
Abnormality of cardiac sounds ...	3 %
Cardiac murmurs (many anæmic) ...	7 %

The percentages given below for lung signs are probably higher than the normal average, as in November and December occurred an outbreak of Influenza which, though in the case of most Europeans taking the form of a mere coryza and in Asiatics of a rather more severely febrile disease, produced in Africans a very appreciable number of cases of Pneumonia and Pleurisy.

In these days, however, when the supply of native patients ever exceeds the accommodation available, so that the Medical Officer is at all times summing up the possibility of moving out some just recovering patient to make room for a more needy case, certain beds are regarded with a covetous eye. These beds are the ones occupied by the increasing supply of Pulmonary Tuberculosis cases. Such patients seem to lie on our hands, possibly infecting our other patients and, after many days leave our Hospital only somewhat relieved.

Impaired Percussion Note	...	...	10 %
Altered Vocal Residence	...	...	10 %
Altered Types of Breath Sounds	...	...	9 %
Adventitious Pulmonary Sounds	...	...	15 %
Asymmetrical expansion	...	...	15 %
Dyspnœa	...	...	1 %
Cataract	...	...	1 %
Conjunctivitis	...	...	1 %
Keratitis	...	...	2 %
Blepharitis	...	...	inappreciable
Numbness complained of...	...	...	1 %
Altered tendon reflexes	...	...	1½%
Tumours (such as ganglions and lipomata)	...	...	1½%

The general picture that one obtains from the above percentages coincides fairly with one's general impression of the Zanzibaris as a people with a very extensive incidence of fungoid diseases of the skin and enlargement of the groin glands, with the impression that a fairly large proportion are suffering from the results of universal ankylostome and malarial infection, even though resistance to these diseases in the native is remarkable and widespread; with the belief that a very heavy proportion of them have contracted venereal diseases, more especially gonorrhœa at some time or other; and finally that generally the native is very susceptible to colds and bronchitic infections.

It may be mentioned that Filariasis, and not the widely diffused gonorrhœa is assumed to be the cause of the remarkable incidence of Hydrocele.

TABLE I.

A. EUROPEAN STAFF.

Name	Rank of Appointment.	Where Stationed on 31st December, 1927.
J. A. Taylor	.. Director of Medical and Sanitary Services	Zanzibar
B. Spearman	.. Deputy Director of Sanitary Services	..
S. M. Vassallo	.. Resident Surgical Officer	.. On leave
J. H. Semple	.. Medical Officer	.. Zanzibar
W. A. Young	.. " "	.. " "
T. A. Austin	.. " "	.. (Pemba) Chake Chake
H. O. Watkins-Pitchford	.. " "	.. (Pemba) Weti
W. H. Smith	.. " "	.. On leave
J. B. C. Madge	.. " "	.. " "
W. L. Gopsill	.. " "	.. Zanzibar
D. D. McCarthy	.. " "	.. " "
Miss A. E. Chambers	.. Matron	.. " "
.. V. I. Dargan	.. Nursing Sister	.. (Pemba) Weti
.. I. Pegg	.. " "	.. Zanzibar
.. A. S. Milne	.. " "	.. " "
.. D. E. Johnstone	.. " "	.. " "
.. I. F. Webb	.. " "	.. " "
W. M. Aders	.. Economic Biologist	.. " "
P. Cairns	.. Sanitary Superintendent	.. " "
E. H. Lavers	.. Sanitary Inspector	.. " "

B. PRINCIPAL MEMBERS OF SUBORDINATE STAFF.

Name.	Rank.	Where Stationed on 31st December, 1927.
K. V. Joshi	.. Assistant Surgeon	.. Zanzibar
F. P. Paul	.. Sub-Assistant Surgeon	.. On leave
C. D. Rana	.. " "	.. (Pemba) Mkoani
M. L. Mehta	.. " "	.. Zanzibar
M. V. Vaidya	.. " "	.. Mkokotoni
R. C. Sood	.. " "	.. (Pemba) Chake Chake
T. W. Dev	.. " "	.. Ziwani
Dinanath Kaura	.. " "	.. Zanzibar
S. Livingstone	.. Dispenser	.. " "
A. J. Rawal	.. " "	.. " "
J. F. de Cruz	.. " "	.. " "
C. Almeida	.. " "	.. " "
L. A. Vaz	.. " "	.. (Pemba) Weti
M. da Silva	.. " "	.. Zanzibar
S. B. P. Fernandes	.. " "	.. " "
J. J. Antao	.. " "	.. " "
I. B. Martin	.. Chief Clerk	.. " "
F. de Souza	.. Senior Sanitary Inspector	.. " "
Jadowji K. Gohel	.. Sanitary Inspector	.. On leave
A. A. Madhani	.. " "	.. Zanzibar
J. M. Noronha	.. Cashier	.. On leave
A. G. Kark	.. Laboratory Assistant	.. " "

C. APPOINTMENTS, CHANGES, ETC., IN STAFF.

APPOINTMENTS.

Name.	Rank of Appointment.	Date.
(a) Europeans.		
Dr. D. D. McCarthy	Medical Officer	1.3.27
Miss I. F. Webb	Nursing Sister	3.3.26
(b) Asiatics.		
F. X. Lobo	Cashier	Transferred from Administration Dept. 1.7.27.
K. R. Trivedi	Clerk	Transferred from P.W.D. 6.7.27.
M. R. Naidu	"	" 7.8.27.
U. S. Dave	"	Transferred from Railway and Electricity Dept. 4.10.27.

ACTING APPOINTMENTS.

Dr. W. A. Young, Medical Officer, as acting Resident Surgical Officer, from 27th July, 1927 to end of year.

Miss M. Gittins, Nursing Sister, as acting Matron from 7th January, 1927 to 13th July, 1927.

TERMINATION OF APPOINTMENTS.

Miss G. M. Rainey, Nursing Sister, on 3rd October, 1927.

RETIREMENT.

Miss M. Gittins, Nursing Sister, on 2nd November, 1927.

LEAVE.

Name.	Rank of Appointment.	Date.
<i>Europeans.</i>		
Dr. S. M. Vassallo	Resident Surgical Officer	27.7.27 to 31.12.27
Dr. T. A. Austin	Medical Officer	1.1.27 " 11.5.27
Dr. H. O. W. Pitchford	" "	1.1.27 " 16.8.27
Dr. J. B. C. Madge	" "	21.11.37 " 31.12.27
Dr. J. M. Semple	" "	1.1.27 " 10.8.27
Dr. W. H. Smith	" "	21.9.27 " 31.12.27
Dr. W. M. Aders	Economic Biologist	1.1.27 " 30.3.27
Miss A. E. Chambers	Nursing Sister	7.1.27 " 13.7.27
" M. Gittins	" "	27.7.27 " 2.11.27
" G. M. Rainey	" "	5.7.27 " 3.10.27
" D. Johnson	" "	19.12.27 " 31.12.27
<i>Asiatics.</i>		
K. V. Joshi	Assistant Surgeon	1.1.27 " 22.5.27
M. V. Vaidya	Sub-assistant Surgeon	26.12.27 " 31.12.27
F. P. Paul	" "	5.9.27 " 31.12.27
J. F. de Cruz	Dispenser	1.1.27 " 9.6.27
J. M. Noronha	Cashier	16.8.27 " 31.12.27
J. F. Rodrigues	Clerk	28.11.27 " 31.12.27
S. R. Fernandes	Storekeeper	1.1.27 " 10.3.27
D. K. Nagar	Clerk	14.12.27 " 31.12.27
F. J. Fernandes	"	1.1.27 " 19.6.27
A. B. Furtado	"	13.6.27 " 21.11.27
Shah Mohammed Khan	Veterinary Officer	1.1.27 " 23.9.27
A. G. Kark	Senior Laboratory Assistant	24.8.27 " 31.12.27
J. K. Gohel	Sanitary Inspector	13.7.27 " 31.12.27
Mohammed Ali Remtulla	" "	21.9.27 " 31.12.27

TABLE II.

(A) Expenditure:—

Personal Emoluments:—		£
Salaries and Allowances		36,951
Other Charges:—		
Hospitals and Dispensaries:	£	
Maintenance of Hospitals	... 2,119	
Medical and Surgical Stores	... 2,529	
	—	4,648
Sanitation Division:		
Sanitary Equipment	... 499	
Maintenance of patients in Infectious Diseases Hospitals	... 335	
Maintenance of Quarantine Station	... 45	
Maintenance of Motor Launch	... 104	
Maintenance of Lepers	... 1,899	
Drugs, Incidental and burial of destitutes	... 91	
Rewards for killing Rats	... 36	
	—	3,009
Laboratories:		
Upkeep of Laboratory equipment	... 102	
Maintenance of Biological Division	... 17	
Vaccines and Serums	... 294	
Suppression of Rinderpest	... 6	
	—	419
Miscellaneous Expenditure:		
Uniforms	... 100	
Incidentals	... 58	
Passages	... 1,262	
Travelling Expenses and Transport	... 797	
Books	... 31	
Purchase of Opium for sale	... 61	
Course of Instruction	... 44	
	—	2,353
Special Expenditure:		
Instruments and Appliances	... 210	
Experimental Animals	... 2	
Typewriters	... 24	
Dental Equipment	... 7	
Microscope	... 96	
	—	339
Total Expenditure		£47,719

(B) Receipts:—

	£
Hospital fees, sale of drugs, etc. ...	972
Contribution from neighbouring dependencies for Quarantine Services ...	2,637
	<hr/>
	£3,609
	<hr/>

(2) Births registered in the Island of Zanzibar, 1921-1927:—

	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Town area ...	479	481	413	501	424	437	471
Mkokotoni district	986	1,090	785	1,064	1,073	846	1,102
Mwera district ...	513	459	282	301	350	401	470
Chwaka district ...	613	628	555	768	499	285	476
Kizimkazi district	—	—	—	—	—	229	87
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total ...	2,591	2,658	2,085	2,634	2,346	2,198	2,606
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

(3) Deaths registered in the Island of Zanzibar 1921-1927:—

	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Town area ...	1,076	1,262	1,258	1,043	1,379	1,560	1,097
Mkokotoni district	839	888	1,009	749	854	799	658
Mwera district ...	780	803	705	476	746	957	707
Chwaka district ...	512	504	482	564	400	335	400
Kizimkazi district	—	—	—	—	—	181	63
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total ...	3,207	3,457	3,454	2,832	3,379	3,832	2,925
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

(4) Comparative Statement of Births and Deaths registered in the Island of Zanzibar 1921-1927:—

	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Town area—							
Births ...	479	481	413	501	424	437	471
Deaths ...	1,076	1,262	1,258	1,043	1,379	1,560	1,097

District—

Births	...	2,112	2,177	1,622	2,133	1,922	1,761	2,135
Deaths	...	2,131	2,195	2,196	1,789	2,000	2,272	1,828

Total—

Births	...	2,591	2,658	2,035	2,631	2,346	2,198	2,606
Deaths	...	3,207	3,457	3,454	2,832	3,379	3,832	2,925

(5) Comparative Statement of Births and Deaths registered in the Island of Pemba 1921-1927:—

		1921.	1922.	1923.	1924.	1925.	1926.	1927.
District								
Chake Chake—								
Births	...	640	625	485	565	860	689	1,047
Deaths	...	533	328	366	476	446	377	422
Weti—								
Births	...	689	467	350	376	419	517	699
Deaths	...	554	491	621	461	441	491	530
Mkoani—								
Births	...	342	575	319	340	749	426	406
Deaths	...	271	397	302	342	307	317	251
Total—								
Births	...	1,671	1,667	1,154	1,281	2,028	1,632	2,152
Deaths	...	1,358	1,216	1,289	1,279	1,194	1,185	1,204

(6) Comparative Statement of Births and Deaths registered in the Zanzibar Protectorate 1921-1927:—

		1921.	1922.	1923.	1924.	1925.	1926.	1927.
Zanzibar Island—								
Births	...	2,591	2,658	2,035	2,634	2,346	2,198	2,606
Deaths	...	3,207	3,457	3,454	2,832	3,379	3,832	2,925
Pemba Island—								
Births	...	1,671	1,667	1,154	1,281	2,028	1,632	2,152
Deaths	...	1,358	1,216	1,289	1,279	1,194	1,185	1,204

Total—

Births	...	4,262	4,325	3,187	3,915	4,374	3,830	4,758
Deaths	...	4,565	1,673	4,743	4,111	4,573	5,017	4,129
		-----	-----	-----	-----	-----	-----	-----
Excess of Deaths over Births	...	303	348	1,554	196	199	1,187	—
Excess of Births over Deaths	...	—	—	—	—	—	—	529
		-----	-----	-----	-----	-----	-----	-----

(7) Births—Zanzibar Township.

(a) Total number of Births registered in the Town of Zanzibar during the year 1927, was as follows:—

Births registered	...	471
Still-born	...	56

Total	...	527

(b) Nationality:—

Europeans	...	8
Asiatics	...	401
Natives Indigenous	...	15
Natives others	...	47

Total	...	471

(8) Deaths—Zanzibar Township.

(a) The total number of Deaths registered in the Town of Zanzibar during the year 1927, was as follows:—

Males	...	588
Females	...	509

Total	...	1,097

(b) Nationality of the diseased:—

Europeans	...	2
Asiatics	...	340
Africans, indigineous	...	592
Africans, others	...	163

Total	...	1,097

(9) Return of Causes of Deaths in Zanzibar Town during 1927:—

I. Epidemic, Endemic and Infectious Diseases:

Diseases.	No.
Typhoid Fever	1
Fever Type not defined	6
Malaria Tertian	123
Malaria Chronic	10
Malaria Remittant	1
Malarial Cachexia	5
Small-pox	18
Measles	1
Whooping Cough	2
Influenza	13
Leprosy	1
Tetanus	2
Tuberculosis, Pulmonary	136
Tubercular glands of neck	1
Tuberculosis Abdominalis	1
Dysentery Bacillary	1
Dysentery Amœbic	1
Dysentery undefined or due to other causes	16
Syphilis	10
Septicæmia	4
Pyæmia	2
Gonorrhœa	2
Cancer	3

II. General Diseases not mentioned above:

Acute Rheumatism	...	26
Chronic Rheumatism	...	3
Diabetes	...	4
Anæmia	...	26
Anæmia Pernicious	...	1
Rickets	...	3
Beri Beri	...	5
Tumour (Abdominal)	...	2

III. Affections of Nervous System and Organs of the Senses:

Meningitis	...	3
Epilepsy	...	8
Paraplegia	...	2
Hemiplegia	...	13
Paralyses	...	5
Cerebral Hæmorrhage	...	3
Apoplexy	...	1
Neuritis (Peripheral)	...	1
Convulsions (Infantile)	...	23
Mastoiditis	...	1
Mania and Confusional insanity	...	1

Carried forward ... 491

IV. *Affections of the Circulatory System:*

Brought forward	...	491
Cardio-Vascular Degeneration	...	1
Myocarditis	...	2
Aneurism	...	1
Valvular	...	5
Mitral insufficiency	...	1
Arterio-Sclerosis	...	1

V. *Affections of the Respiratory System:*

Chronic Bronchitis	...	17
Bronchitis	...	70
Broncho-Pneumonia	...	41
Asthma	...	8
Pleurisy	...	2
Pneumonia (lobar)	...	24
Pneumonia (double)	..	7

VI. *Diseases of the Digestive System:*

Strangulated Hernia	..	5
Diarrhœa and Enteritis under two years	...	13
Diarrhœa and Enteritis two years and over	...	52
Ankylostomiasis	...	22
Cirrhosis of Liver	...	5
Peritonitis	...	1
Acute Yellow Atrophy of Liver	...	1
Toxæmia	...	2
Suppurative Pylephlebitis	...	1
Gastritis	...	1
Enlarged liver	...	1

VII. *Diseases of the Genito-Urinary System (Non-Venereal):*

Extravasation of urine	...	1
Chronic Nephritis	...	12
Retention of urine	...	1
Bright's Disease	...	1
Bilharzia	...	1
Uterine Sepsis	...	1
Hydrocele Septic	...	2

Carried forward ... 800

	Brought forward ...	800
<i>VIII. Puerperal State:</i>		
Puerperal Fever	...	2
Puerperal Septicæmia	...	2
Retention of Placenta	...	1
Eclampsia	...	1
<i>IX. Affections of the Skin and Cellular Tissues:</i>		
Acute Cellulitis	...	3
Ulcers	...	4
Elephantiasis	...	1
Abscess (leg)	...	1
Abscess (liver)	...	1
<i>X. Diseases of Bones and Organs of Locomotion (other than Tuberculosis):</i>		
	...	0
<i>XI. Diseases of Infancy:</i>		
Premature Birth	...	6
Malnutrition Chronic	...	2
Insufficient Nourishment	...	2
Asphyxia Neonatorum	...	1
<i>XII. Affections of Old Age:</i>		
Senility	...	213
<i>XIII. Affections Produced by External Causes:</i>		
Burns	...	3
Accidental Poisoning	...	1
Other Injuries	...	3
Drowning	...	3
Fractured Skull	...	4
Compound Fracture	...	1
<i>XIV. Ill-Defined Diseases:</i>		
Ascites	...	2
Debility	...	29
Unknown	...	1
Marasmus	...	1
Syncope	...	7
Dropsy	...	2
Total ...		1,097

TABLES IV AND V.

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.				Out-patients.			
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
		Admissions.	Deaths.					
I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.								
1 Enteric Group								
(a) Typhoid Fever	1	1	..	2	..	2	..	2
(b) Paratyphoid A	..	1	1	1	..	1	..	1
(c) Paratyphoid B	..	13	..	13	..	12	2	14
(d) Type not defined	..	..	..	..	1	..	..	..
Relapsing Fever	..	1	..	1	..	2	..	2
Malaria—								
(a) Tertian (Benign)	..	207	..	207	4	3,257	791	4,048
(b) Quartan	..	7	..	7	..	19	6	25
(c) Aestivo-autumnal	..	58	2	58	1	439	95	534
(d) Caxhexia Chronic	..	45	1	45	..	772	328	1,101
(e) Blackwater	..	2	..	2	..	3	..	3
6 Small-pox	9	41	19	50	..	..	..	..
7 Measles	..	1	..	1	..	10	4	14
9 Whooping Cough	..	..	..	..	..	32	32	64
11 Influenza	..	84	..	84	3	1,190	263	1,453
13 Mumps	..	1	..	1	..	94	23	117
16 Dysentery—								
(a) Amœbic	..	5	..	5	..	6	..	6
(b) Bacillary	..	39	12	39	..	43	10	53
(c) Undefined or due to other causes	..	5	..	5	..	34	7	41
20 Leprosy—								
Mixed	..	10	..	10	..	26	..	26
25 Other Epidemic Diseases—								
(b) Varicella (Chicken-pox)	..	14	..	14	..	36	2	38
(e) Dengue	..	..	..	..	..	1	..	1
(g) Yaws	..	2	16	18	..	1,537	519	2,086
29 Tetanus (Lock Jaw)	..	1	1	1	..	1	..	1
30 Mycosis								
Madura foot	..	1	..	1	..	2	..	2
31 Tuberculosis. Pulmonary and Laryngeal	2	99	52	101	4	186	25	211
35 Tuberculosis of Bones and Joints	1	3	..	4	..	3	1	4
36 Tuberculosis of other Organs—								
(b) Lymphatic System	..	2	..	2	..	1	3	4
38 Syphilis—								
(a) Primary	..	7	..	7	3	121	28	149
(b) Secondary	..	3	..	3	..	19	17	33
(c) Tertiary	..	26	3	26	1	39	6	45
(e) Period not indicated	..	23	4	23	..	218	86	304
39 Soft Chancre	..	11	..	11	..	491	37	528
40 A.—Gonorrhœa and its complications	..	33	..	33	..	1,990	163	2,153
B.—Gonorrhœal Ophthalmia	..	4	..	4	..	2	7	9
C.—Gonorrhœal Arthritis	..	8	..	8	1	14	..	14
D.—Granuloma Venereum	..	1	..	1	..	2	3	5
Carried forward	15	772	95	788	18	10,606	2,485	13,091

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.		In-patients.					Out-patients.		
		Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
			Admissions.	Deaths.					
Brought forward	..	15	773	95	788	18	10,606	2,455	13,019
41 Septicæmia—									
Blood poisoning	.. ..	..	..	..	..	..	5	..	5
Infective Wound	.. ..	..	1	..	1	..	2	2	4
Multiple Abscess	.. ..	..	2	1	2	..	3	..	3
42 Other Infectious Diseases—									
Filariasis	.. ..	..	21	..	21	..	183	34	217
Papular Fever	.. ..	..	2	..	2	..	3	3	6
II. GENERAL DISEASES NOT MENTIONED ABOVE.									
16 Cancer or other malignant Tumours of the Female Genital Organs	.. ..	..	1	..	1	..	..	1	1
48 Cancer or other malignant Tumours of the Skin	.. ..	..	..	..	..	..	2	..	2
49 Cancer or other malignant Tumours of organs not specified	.. ..	..	2	..	2	..	6	2	8
50 Tumours (non-malignant)—									
Adenoma	.. ..	..	5	..	5	..	37	10	47
Cyst	.. ..	..	3	..	3	..	9	6	15
Dermoid Cyst	.. ..	..	..	..	..	..	1	..	1
Molluscum Contagiosum	.. ..	1	4	..	5	..	5	2	7
Osteoma	.. ..	..	1	..	1	..	1	1	2
Papilloma	.. ..	..	..	..	..	..	2	..	2
Polypus	.. ..	..	1	..	1	..	2	1	3
Sebaceous Cyst	.. ..	..	2	..	2	..	12	5	17
Fibroma	.. ..	..	..	..	..	..	3	1	4
51 Acute Rheumatism	.. ..	..	1	..	1	..	41	10	51
52 Chronic Rheumatism —									
Arthritis	.. ..	..	12	..	12	..	1,300	906	2,206
Rheumatoid Arthritis	.. ..	..	..	..	..	..	1	..	1
55 Beri-Beri	.. ..	..	10	1	10	1	18	1	19
56 Rickets	.. ..	..	..	..	..	..	..	1	1
57 Diabetes (not including Insipidus)	.. ..	..	..	..	..	..	11	3	14
58 Anæmia—									
(a) Pernicious	.. ..	..	1	1	1	..	..	1	1
(b) Other Anæmias and Chlorosis	.. ..	..	3	1	3	..	461	239	700
59 Diseases of the Pituitary Body	.. ..	..	..	..	..	..	..	1	1
60 Diseases of the Thyroid Gland—									
(a) Exophthalmic Goitre	.. ..	..	1	..	1	..	7	2	9
(b) Other Diseases of the Thyroid Gland	.. ..	..	..	..	..	..	2	6	8
61 Diseases of the Para-Thyroid Glands—									
Tetany	.. ..	..	..	..	..	..	1	..	1
Carried forward	..	16	846	99	862	19	12,724	3,723	16,447

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.						Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.	
		Admissions.	Deaths.						
Brought forward ..	16	846	99	862	19	12,724	3,723	16,447	
II GENERAL DISEASES NOT MENTIONED ABOVE—(Contd.)									
64 Diseases of the Spleen—									
Splentitis ..	..	1	..	1	..	173	153	326
Other Diseases of the Spleen ..	..	..	..	..	..	2	..	2
65 Leukæmia—									
(a) Leukæmia ..	..	1	..	1	..	1	..	1
66 Alcoholism—									
Acute ..	..	..	..	..	..	3	..	3
Inebriety ..	..	2	..	2	..	2	..	2
69 Other General Diseases—									
Auto-intoxication ..	..	3	1	3	..	4	1	5
Purpura Hæmorrhagica ..	..	2	..	2	..	1	2	3
Obesity ..	..	..	..	..	..	1	..	1
III. AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES.									
71 Meningitis (not including Tuberculous Meningitis or Cerebro-Spinal Meningitis)	..	3	2	3	..	2	1	3	
72 Locomotor Ataxia ..	..	5	1	5	..	13	3	16
73 Other Diseases of the Spinal Cord—									
Myelitis ..	..	1	1	1	..	1	..	1
Spastic Paraplegia ..	1	..	..	1	..	1	..	1
74 Apoplexy—									
(a) Hæmorrhage ..	..	1	1	1	..	1	..	1
(b) Embolism ..	..	..	..	..	..	2	..	2
75 Paralysis—									
(a) Hemiplegia ..	..	8	5	8	..	25	6	31
(b) Other Paralysis ..	..	9	2	9	..	54	15	69
77 Other forms of Mental Alienation—									
Dementia ..	..	4	..	4	..	5	..	5
Delusional Insanity ..	..	1	..	1	..	1	..	1
Other Mental Diseases ..	..	13	3	13	..	10	5	15
78 Epilepsy ..	..	11	1	11	..	19	6	25
79 Convulsions (non-puerperal) 5 years or over	..	..	..	..	..	4	1	5
80 Infantile Convulsions ..	..	..	..	..	..	2	..	2
28 A.—Hysteria ..	..	1	..	1	..	..	5	5
B.—Neuritis ..	..	3	..	3	..	60	19	79
C.—Neurasthenia ..	..	2	..	2	..	15	1	16
D.—Hemicrania ..	..	..	..	..	..	2	2	4
F.—Migraine ..	..	..	..	..	..	6	4	10
Carried forward ..	17	917	116	934	19	13,134	3,947	17,081	

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
		Admissions.	Deaths.					
Brought forward ..	17	917	116	934	19	13,134	3,947	17,081
III. AFFECTION OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES—(Continued).								
G.—Neuralgia	4	..	4	..	1,000	388	1,388
H.—Sciatica	1	..	1	..	39	3	42
I.—Headache	735	146	881
J.—Vertigo	8	..	8
84 Other affections of the Nervous System, such as Paralysis Agitans	1	..	1	..	11	..	11
85 Diseases of the Eye and Annexa—								
Blepharitis	24	15	39
Cataract	19	..	19	..	118	44	162
Chalazion	1	..	1	..	1	..	1
Conjunctivitis	1	21	..	22	..	1,462	497	1,959
Ectropion	1	..	1	..	2	..	2
Foreign Body	7	..	7
Glaucoma	2	..	2
Iritis	13	..	13	..	53	6	59
Keratitis	3	..	3	..	86	19	105
Optic Neuritis	1	..	1	..	3	..	3
Ptoxis	1	..	1
Stye	2	..	2	..	14	1	15
Tumour	1	..	..	..
Ulcer of Cornea	3	..	3	..	100	40	140
Other Diseases	8	..	8	..	112	18	130
86 Affections of the Ear and Mastoid Sinus—								
Mastoiditis	3	..	3	..	3	3	6
Otorrhœa	1	..	1	..	219	107	326
Otitis Externa	3	..	3	..	22	4	26
.. Interna	10	2	12
.. Media	3	..	3	..	309	109	418
Other Diseases	4	..	4	..	381	90	471
Cerumen in Ear	12	2	14
IV. AFFECTIONS OF THE CIRCULATORY SYSTEM.								
87 Pericarditis	2	..	2	..	2	..	2
88 Acute Endocarditis and Myocarditis	4	3	4	..	5	1	6
89 Angina Pectoris	1	..	1
90 Other Diseases of the Heart—								
(a) Valvular—								
Mitral	16	5	16	..	48	14	62
Aortic	2	..	2	..	3	1	4
(b) Myocarditis	11	2	11	1	24	8	32
Carried forward ..	18	1,044	126	1,062	21	17,951	5,465	23,416

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	18	1,044	126	1,062	21	17,951	5,465	23,416
IV. AFFECTIONS OF THE CIRCULATORY SYSTEM—(Continued).								
(c) Disordered action of Heart—								
Bradycardia ..	..	..	..	..	..	1	..	1
Tachycardia ..	..	..	..	..	..	1	..	1
(d) Functional Diseases ..	..	..	..	..	..	1	..	1
(e) Hypertrophy of Heart ..	..	..	..	..	..	1	..	1
91 Diseases of the Arteries ..	..	..	..	..	..	..	..	..
(a) Aneurism ..	..	1	..	1	..	3	2	5
(b) Arterio-Sclerosis ..	..	..	..	..	..	1	..	1
92 Embolism or Thrombosis (non-cerebral) ..	..	1	1	1	..	1	..	1
93 Diseases of the Veins ..	..	..	..	..	..	..	..	..
Hæmorrhoids ..	..	33	1	33	1	84	27	111
Varicose Veins & Varicocele ..	1	6	..	7	..	23	2	25
Phlebitis ..	..	1	1	1	..	1	..	1
94 Diseases of the Lymphatic System—								
Lymphangitis ..	..	30	..	30	..	128	13	141
Lymphadenitis, Bubo (non-specific) ..	..	53	..	53	3	212	22	234
95 Hæmorrhage of undetermined cause—								
Epistaxis ..	..	..	..	..	..	10	3	13
V. AFFECTIONS OF THE RESPIRATORY SYSTEM.								
97 Diseases of the Nasal Passages—								
Polypus ..	..	1	..	1	..	10	3	13
Rhinitis ..	..	..	..	..	..	219	133	352
Coryza ..	..	1	..	1	..	416	48	464
98 Affections of the Larynx—								
Laryngitis ..	..	8	..	8	..	38	13	51
99 Bronchitis—								
(a) Acute ..	..	52	2	52	..	4,984	1,416	6,400
(b) Chronic ..	..	6	2	6	2	221	57	278
100 Broncho-Pneumonia ..	1	37	9	38	2	33	5	38
101 Pneumonia—								
(a) Lobar ..	..	27	3	27	..	71	7	78
(b) Unclassified ..	1	17	4	18	..	49	3	52
102 Pleurisy—								
(a) Empyema ..	..	1	..	1	..	1	..	1
(b) Other Pleurisy ..	..	29	2	29	..	75	10	85
105 Asthma ..	..	12	..	12	..	257	84	341
106 Pulmonary Emphysema ..	..	2	..	2	..	5	..	5
Carried forward ..	21	1,262	151	1,383	29	24,797	7,313	32,110

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.				Out-patients.			
	Remaining in Hospital at the end of 1926.	Yearly Total.	Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
	Admissions.							
Brought forward ..	21	1,362	157	1,383	29	24,797	7,313	32,110
V. AFFECTIONS OF THE RESPIRATORY SYSTEM (Continued).								
107 Other affections of the Respiratory System—								
Pneumothorax ..	..	1	1	1	..	1	..	1
Fibrosis lung ..	..	..	..	..	..	1	..	1
103 Congestion of lungs ..	..	..	..	..	..	2	3	5
VI. DISEASES OF THE DIGESTIVE SYSTEM.								
108 Diseases of the Buccal Cavity and Adnexa—								
Alveolar Abscess ..	..	3	..	3	..	8	2	10
Dental Caries ..	..	7	..	7	..	2,674	828	3,502
Pyorrhœa Alveolaris ..	..	..	..	..	..	32	16	48
Stomatitis ..	..	..	..	..	..	84	20	104
Glossitis ..	..	..	..	..	..	8	3	11
Ulceration of Mouth ..	..	1	..	1	..	..	1	1
109 Affections of the Pharynx or Tonsils—								
Sore Throat or Pharyngitis ..	..	3	..	3	..	373	48	421
Tonsillitis ..	..	15	..	15	..	844	248	1,092
Other Diseases of Pharynx or Tonsils ..	..	3	..	3	..	73	10	83
111 A.—Ulcer of the Stomach ..	..	2	..	2	..	5	4	9
B.—Ulcer of the Duodenum ..	..	1	..	1	..	1	..	1
112 Other affections of the Stomach—								
Gastritis ..	..	2	..	2	..	54	37	91
Dyspepsia, etc. ..	..	13	..	13	..	617	265	882
Gastric Catarrh ..	..	..	..	..	..	7	4	11
Hæmatemesis ..	..	..	..	..	..	1	..	1
113 Diarrhœa and Enteritis—								
Under two years ..	..	5	..	5	..	96	10	106
114 Diarrhœa and Enteritis—								
Two years and over ..	..	29	6	29	..	515	142	657
Colic ..	..	25	..	25	..	2,118	541	2,659
Colitis ..	..	..	..	..	..	37	9	46
115 Ankylostomiasis ..	7	196	23	203	6	7,063	3,555	10,618
116 Diseases due to Intestinal Parasites—								
(c) Nematoda (other than Ankylostoma)	..	..	..	..	..	..	..	..
Ascaris ..	..	5	..	5	..	51	26	77
Oxyuris ..	..	..	..	..	..	54	5	59
117 Appendicitis ..	..	2	..	2	..	3	4	7
Carried forward ..	28	1,675	181	1,703	35	39,519	13,094	52,613

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	Remaining in Hospital at the end of 1926.	In-patients.				Out-patients.		
		Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
		Admissions.	Deaths.					
Brought forward ..	28	1,675	181	1,703	35	39,519	13,094	52,613
VI. DISEASES OF THE DIGESTIVE SYSTEM—(Contd.).								
118 Hernia—								
(a) Inguinal	3	113	7	116	9	372	7	379
(b) Umbilical .. ..	..	1	..	1	..	1	2	3
(c) Strangulated .. ..	..	13	2	13	1	13	2	15
119 Affections of the Anus, Fistula, etc.								
Fæcal Fistula .. ..	..	2	1	2	..	5	..	5
Fissure of Anus .. ..	..	3	..	3	..	3	..	3
Prolapse of Anus .. ..	..	1	..	1	..	1	1	2
119 B.—Other affections of the Intestines—								
Enteroptosis .. ..	..	2	..	2	..	3	4	7
Constipation .. ..	..	12	..	12	..	6,190	3,055	9,245
120 Acute Yellow Atrophy of the Liver	..	1	1	1	..	1	..	1
122 Cirrhosis of the Liver .. ..	..	1	1	1	..	2	..	2
(a) Alcoholic .. ..	..	..	..	..	..	1	..	1
(b) Other forms .. ..	..	3	2	3	1	2	1	3
124 Other affections of the Liver—								
Abscess .. ..	..	1	..	1	..	6	..	6
Hepatitis .. ..	..	10	..	10	..	63	13	76
Jaundice .. ..	..	2	..	2	..	16	2	18
126 Peritonitis (of unknown cause)	..	6	2	6	..	8	..	8
127 Other affections of the Digestive System	..	3	..	3	..	24	8	32
VII. DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL).								
128 Acute Nephritis .. ..	..	5	1	5	..	12	5	17
129 Chronic Nephritis	1	12	7	13	..	26	17	43
130 B.—Schistosomiasis .. ..	..	13	..	13	..	556	44	600
131 Other affections of the Kidneys								
Pyelitis .. ..	..	1	..	1	..	12	1	16
Acidosis .. ..	..	..	..	..	..	..	1	1
Hæmaturia (non-Bilharzial)	..	1	..	1	..	11	..	11
132 Urinary Calculus .. ..	..	..	..	..	..	1	..	1
133 Diseases of the Bladder—								
Cystitis .. ..	..	13	2	13	..	94	18	112
Incontinence of Urine .. ..	..	1	..	1	..	5	1	6
Retention of Urine .. ..	..	11	1	11	..	45	..	45
Rupture of Bladder .. ..	..	4	1	4	..	2	3	5
Carried forward ..	32	1,910	209	1,942	46	46,994	16,282	63,276

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
		Admissions.	Deaths.					
Brought forward ..	32	1,910	209	1,942	46	46,994	16,282	63,276
VII. DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL)—(Continued).								
134 Diseases of the Urethra—								
Stricture .. ..	..	7	..	7	..	63	5	68
Abscess .. ..	..	8	..	8	1	8	..	8
Fistula	1	4	..	5	..	4	1	5
Rupture	1	..	..	1	..	7	..	7
135 Diseases of the Prostate—								
Hypertrophy .. ..	..	1	1	1	..	1	..	1
Prostatitis .. ..	..	2	..	2	..	3	..	3
136 Diseases (non-Venerel) of the Genital Organs of Man—								
Epididymitis .. ..	..	6	..	6	..	39	1	40
Orchitis .. ..	..	25	..	25	1	379	..	379
Hydrocele	10	177	4	187	6	513	..	513
Ulcer of Penis.. ..	..	3	..	3	1	176	..	176
Phimosis	1	43	..	44	..	377	..	377
Para-Phimosis.. ..	..	9	..	9	..	24	..	24
137 Cysts or other non-malignant Tumours of the Ovaris	..	1	..	1	..	..	5	5
138 Salpingitis—								
Abscess of the Pelvis ..	..	5	..	5	..	..	25	25
139 Uterine Tumours (non-malignant)—								
Fibroid .. ..	..	9	..	9	..	..	51	51
141 A.—Metritis .. ..	..	9	1	9	..	..	26	26
B.—Other affections of the Female Genital Organs—								
Displacement of Uterus ..	..	2	..	2	..	..	9	9
Amenorrhœa .. ..	..	..	..	..	..	..	72	72
Dysmenorrhœa .. ..	..	..	..	..	..	..	14	14
Leucorrhœa .. ..	..	1	..	1	..	..	9	9
Ovaritis .. ..	..	1	..	1	..	..	5	5
Menorrhagia .. ..	..	..	..	..	..	..	62	62
Prolapse .. ..	..	..	..	..	..	..	44	44
Vaginitis .. ..	..	..	..	..	..	..	8	8
Vulvitis .. ..	..	..	..	..	..	..	5	5
142 Diseases of the Breast (non-puerperal)—								
Mastitis	1	2	..	3	..	..	36	36
Abscess of Breast	1	..	..	1	..	..	4	4
Other Diseases of the Breast	..	1	..	1	..	..	6	6
VIII. PUERPERAL STATE.								
143 A.—Normal Labour .. ..	..	17	..	17	1	..	21	21
Delayed Labour .. ..	..	..	..	..	..	..	2	2
Carried forward ..	47	2,243	215	2,290	56	48,588	16,693	65,281

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (in-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.				Out-patients.			
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
		Admissions.	Deaths.					
Brought forward ..	47	2,243	215	2,290	56	48,588	16,693	65,281
VIII. PUERPERAL STATE--(Cont).								
B.—Accidents of Pregnancy—								
(a) Abortion ..	..	5	1	5	..	..	26	26
(c) Vomiting ..	..	..	..	..	..	..	3	3
(d) Ante-partum hæmorrhage ..	..	3	..	3	..	..	3	3
144 Retained Placenta ..	..	1	1	1	..	..	3	3
Puerperal Hæmorrhage ..	..	..	..	..	..	..	2	2
146 Puerperal Septicæmia ..	2	..	1	2	..	..	1	1
148 Puerperal Eclampsia ..	..	..	..	..	..	..	1	1
149 Sequelæ of Labour ..	..	..	..	..	..	..	1	1
150 Hydroidiform mole ..	..	1	..	1	..	..	1	1
IX. AFFECTIONS OF THE SKIN AND CELLULAR TISSUES.								
151 Gangrene ..	3	7	..	10	..	11	6	17
152 Boil ..	..	5	..	5	..	691	154	785
Carbuncle ..	..	5	..	5	..	10	..	10
153 Abscess—								
Whitlow ..	3	61	1	64	1	278	58	331
Cellulitis ..	2	144	5	146	2	1,378	303	1,681
154 A.—Tinea ..	..	..	..	..	..	668	185	853
B.—Scabies ..	1	9	..	10	..	1,905	1,677	6,532
E.—Tropical Ulcer ..	..	2	..	2	..	14	2	16
F.—Other Ulcers ..	13	400	4	413	4	13,856	2,843	16,699
155 Other Diseases of Skin —								
Erythema ..	..	..	..	..	..	5	3	8
Urticaria ..	..	1	..	1	..	13	5	18
Eczema ..	1	3	..	4	..	442	126	568
Herpes ..	..	..	..	..	..	20	1	21
Psoriasis ..	..	..	..	..	..	7	..	7
Prickly Heat ..	..	..	..	..	..	74	7	81
Elephantiasis ..	1	83	1	84	4	203	49	252
Myiasis ..	..	1	..	1	..	1	..	1
Chiggers ..	..	17	1	17	..	688	147	835
Cutaneous Leishmaniasis ..	..	1	..	1	..	1	..	1
Dermatitis ..	..	13	..	13	..	417	53	470
Acne ..	..	..	..	..	..	8	1	9
Impetigo ..	..	..	..	..	..	34	12	46
Contagiosa ..	..	2	..	2	..	8	1	9
Lichen ..	..	..	..	..	..	2	1	3
Seborrhœa ..	..	..	..	..	..	1	..	1
Wart ..	..	..	..	..	..	6	4	10
156 Diseases of Bones—								
Osteitis ..	3	5	..	8	..	22	7	29
Osteo-myelitis ..	1	11	..	12	1	16	6	22
157 Diseases of Joints—								
Arthritis ..	1	28	1	29	..	177	30	207
Synovitis ..	1	15	..	16	..	176	34	210
Carried forward ..	79	3,066	231	3,145	68	72,655	22,449	95,104

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (in-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	79	3,066	291	3,145	68	72,655	72,149	95,104
158 Other Diseases of Bones or Organs of Locomotion—								
Bursitis .. ..	..	..	..	..	..	3	..	3
Ganglion .. ..	..	3	..	3	..	16	4	20
Lumbago .. ..	..	1	..	1	..	185	65	250
Myalgia .. ..	..	1	..	1	..	294	67	361
Torticollis .. ..	..	..	..	..	..	8	1	9
Hallux Valgus.. ..	..	1	..	1	..	1	1	2
Flat Foot .. ..	..	..	..	..	..	1	..	1
X. MALFORMATIONS.								
159 Malformations								
Hydrocephalus .. ..	..	..	..	..	..	1	..	1
Ingrowing toe-nail .. ..	..	1	..	1	..	1	..	1
Equino-Varus .. ..	..	1	..	1	..	1	..	1
XI. DISEASES OF INFANCY.								
162 Other affections of Infancy..	..	..	..	..	..	..	1	1
163 Infant Neglect (infants of three months or over)	..	..	..	..	..	2	1	3
XII. AFFECTIONS OF OLD AGE.								
164 Senility— Senile Debility .. ..	..	..	53	33	53	1	55	56
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.								
166 Corrosive Poisoning (Intentional)	..	1	1	1	..	1	..	1
175 Food Poisoning— Ptomaine Poisoning .. ..	..	1	..	1	..	3	..	3
176 Attacks of Poisonous Animals Insect Bite .. ..	..	..	..	..	..	..	1	1
177 Other accidental Poisonings	..	2	..	2	..	9	2	11
178 Burns (by Fire)	1	12	3	13	2	52	51	103
182 Drowning (accidental) .. ..	..	2	1	2	..	2	..	2
184 Wounds (by cutting or stabbing Instruments)	..	84	2	84	1	1,191	312	1,503
185 Wounds (by Fall)	2	137	7	139	9	3,895	498	4,393
186 Wounds (in Quarries or Mines .. ..	..	..	..	..	..	79	..	79
188 Wounds (crushing, e.g., rail accidents, etc.)	2	1	..	3	..	458	60	518
189 Injuries inflicted by Animals, Bites, Kicks, etc. .. ..	..	29	..	29	..	30	10	40
Carried forward ..	84	3,396	278	3,480	81	78,943	23,524	102,467

TABLES IV AND V.—(Continued.)

Return of Diseases and Deaths (in-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
		Admissions.	Deaths.					
Brought forward ..	34	3,396	278	3,480	81	78,943	23,524	1,02,467
194 Exposure to Heat—								
Sunstroke ..	..	1	..	1	..	2	1	3
201 A.—Dislocation ..	2	4	..	6	..	10	3	13
B.—Sprain ..	1	2	..	3	1	74	11	85
C.—Fracture ..	3	40	4	43	..	56	12	68
202 Other external Injuries—								
Concussion ..	..	4	..	4	..	4	1	5
Contusion ..	..	12	..	12	1	1,140	11	1,151
Foreign body (except eye) ..	..	2	..	2	..	5	3	8
Strain ..	..	2	..	2	..	8	4	12
XIV. DEFINED DISEASES.								
205 A.—Diseases not already specified or ill-defined—								
Ascites ..	..	7	1	7	..	5	..	5
Edema ..	..	1	..	1	..	145	34	179
Asthenia or Debility ..	1	29	7	30	2	330	77	407
Febricula ..	..	..	..	..	..	1	2	3
Malnutrition ..	..	7	..	7	..	80	40	120
Pyrexia of uncertain origin ..	1	50	1	51	..	2,288	362	2,650
N. Y. D. ..	..	..	..	..	..	4	..	4
B.—Malingering ..	..	..	..	..	..	1	..	1
Observation ..	..	1	..	1	..	1	..	1
Examinations ..	..	..	..	..	..	3	4	7
Total ..	92	3,558	291	3,650	85	83,100	24,089	1,07,189

APPENDICES.

- I. Registration of Medical Practitioners and Dentists.
- II. Report on Leper Settlements.
- III. Control of Opium.
- IV. Report of Zanzibar Maternity Association.

APPENDIX I.

REGISTRATION OF MEDICAL PRACTITIONERS, DENTISTS AND DRUGGISTS

The Registration Board consists of the Director of Medical and Sanitary Services, the Deputy Director of Sanitary Services and one registered Medical Practitioner not in Government Service.

During the year the Board met on three occasions, and three medical practitioners were registered. Two of these were private practitioners and one in Government Service.

One dentist was registered during the year.

Twenty-two druggists were registered, and 35 dispensers licensed to dispense medicines whilst in the employ of the Government, or charitable agencies.

APPENDIX II.

LEPER SETTLEMENTS.

In April 1927 the bungalow for lady missionaries at Funzi Island was completed and in that month Miss Bartlett, U.M.C.A. Nursing Sister took up her residence there, and in June Miss Dunford belonging to the same Missionary Society joined her. Miss Bartlett undertook the medical treatment and care of the lepers under the supervision of the Medical Officer, Weti, whilst Miss Dunford assisted her, undertaking the material care of the patients and starting classes in elementary education. Undoubtedly the presence of these ladies has made the greatest possible difference to the well-being and happiness of the unfortunate lepers, and too high a tribute cannot be paid to them for their self-sacrificing work.

The Medical Officer Weti was in charge of the Island throughout the year.

The Director of Medical and Sanitary Services paid visits of inspection on 11th April 1927 and 19th December 1927, the Deputy Director of Sanitary Services in 25th March, 1927.

Inspections were made by His Excellency the British Resident and the Right Reverend the Bishop of Zanzibar.

Mr. Frank Oldrieve, Secretary of the British Empire Leprosy Relief Association, visited Zanzibar during the year and inspected

Funzi Island and expressed himself satisfied with the general arrangements. He also gave a lantern lecture on the subject of Leprosy and afforded this Department every assistance from his large store of experience in the organization of leper asylums throughout the British Empire.

The bungalow for the nursing sisters was completed in April. A supply of running water from the main water tanks was installed at the Dispensary in July and the permanent buildings for the lepers were completed towards the middle of the year.

A somewhat serious epidemic of dysentery occurred in March and April, and resulted in ten deaths. Fortunately Miss Bartlett arrived opportunely in March and on account of this epidemic obtained permission to take up her residence in the Island without waiting for Miss Dunford as had originally been decided. Thanks to her active measures of treatment and nursing the epidemic was soon controlled. Owing to this epidemic and to the fact that many lepers were found to be suffering from Ankylostomiasis, and to a less extent from Syphilis, treatment for leprosy was suspended for a time and the lepers given specific treatment for the above mentioned diseases.

Routine injections of Sodium Morrhuate and E.C.C.O. (Muir's formula) were resumed in the beginning of June, and in addition a supply of *Hydnocarpus anthelmintica* nuts was received from Siam and the nuts given daily.

In August a supply of Alipol was received from Calcutta. Miss Bartlett writes "I started to give the nuts daily beginning with four until they were able to digest as many as fifteen or twenty daily. This treatment in conjunction with the injections of "Rydnoceol" has proved very popular with the lepers as several who refused injection have been very willing to take the nuts and those who were having injections only needed one injection a week instead of two.

"The nuts have been very beneficial, as they act as a mild purgative. Care has to be taken, as they are able to take larger quantities of the nuts, that intestinal irritation does not result. This occurred in one or two cases.

"Increased exercise resulting from the lepers cultivating the land more than they did has also had a good effect on their general health. The great drawback to a greater improvement is due, I think, to the very promiscuous relations of the sexes, a condition of things it is impossible to alter here. But I think there is no doubt that the treatment during the past months has improved the health of the lepers generally and in about twenty or thirty cases there are marked signs of improvement and even hopes of a cure in the future.

"Some cases—particularly advanced nodular cases—show no signs of improvement and in four cases the condition has become worse. These were nodular cases of three and four years standing and two are under seventeen years of age".

Nine lepers were selected in June by the Medical Officer Weti for treatment by injection of a preparation of *Hydnocarpate* of Sodium

sent by Messrs. Burroughs and Welcome at the request of Sir Leonard Rogers. Appended are notes of these cases.

- No. 1. Leper No. 55. Admitted 27th August, 1926.
Age 25. Sex Female.
- Condition 27-8-26. Puffiness of face and patchy infiltration of nostrils, lips and left eyebrow. Nasal Smears show many well formed B. Lepræ.
- Treatment 1926. Sodium Morrhuate.
1927. Sodium Morrhuate till June.
- Condition 11-6-27. Infiltration of face passing to pea-size nodules. Bean-size plaques on left arm. Nasal Smears positive.
- Treatment 20-6-27. Three per cent intramuscular Sodium Hydnocarpate.
- Condition 21-12-27. Marked improvement since treatment with Sodium Salts from Hydnocarpus and Hydnocarpus nuts. Nodules on face are much smaller and general conditions are good.
- No. 2. Funzi Leper No. 13. Admitted 2nd July, 1923. Age 24, Sex Male.
- Condition 2-7-23. A two years history of plaques on face, hands, feet and body. Nerves large. Many B. Lepræ recovered from nose.
- Condition 11-6-27. Active ulceration on left hand. Deformity of both ears. Nodules size of broad beans on lips, nose, and cheeks show infiltration amounting almost to nodulation. Dermatitis of legs. All fingers thickened. Small nodules round right breast, and nipples themselves hypertrophied. Nerves very much thickened.
- Treatment 20-6-27. Three per cent intramuscular Sodium Hydnocarpate.
- Condition 21-12-27. General health improved. No marked improvement in disease.
- No. 3. Funzi Leper No. 16. Admitted 29th July, 1923. Age 15, Sex Male.
- Condition 29-7-23. Unknown.
- Condition 31-5-26. Pea-size nodules on chin, cheeks and lips. Spleen much enlarged. Nasal Smears show many B. Lepræ.
- Treatment 1924. Regular Sodium Morrhuate.
1925. " " "
1926. Regular Sodium Morrhuate up to June.
- 1926 June Muir's E.C.C.O. till June.
1927. Muir's E.C.C.O. till June.
- Condition 11-6-26. Infiltration of chin, cheeks and lips amounting almost to nodulation. No active ulceration. Nasal Smears show few and broken up B. Lepræ.

- Treatment 20-6-27. Three per cent intramuscular Sodium Hydnocarpate.
- Condition 21-12-27. General health improved, nodules on face rather smaller.
- No. 4. Funzi Leper No. 46. Admitted 18th November, 1925. Age 22, Sex Female.
- Condition 13-11-25. Unknown.
- Condition 31-5-26. Infiltration of nose and ulcerating nodules on face, hands and arms. Nipples much hypertrophied. Nasal Smears positive but bacilli scattered.
- Treatment 1925. Regular Sodium Morrhuate.
1926. " " " "
1927. Regular Sodium Morrhuate till June, 1927.
- Condition 11-6-27. Collapse of bridge of nose. Infiltration of face which is almost leonine. Ulceration of ears and of right hand, both legs and of face. Nasal Smears negative for B. Lepræ but showing many diplococci.
- Treatment 20-6-27. Three per cent intramuscular Sodium Hydnocarpate.
- Condition 21-12-27. General health poor. Showed improvement for about two months on new treatment. Injections after that time stopped owing to severe reaction. Condition improved again on Hydnocarpate nuts.
- No. 5. Funzi Leper No. 61. Admitted 29th October, 1926. Age 25, Sex Male.
- Condition 29-10-26. Nose and face infiltrated considerably and some pea-size nodules. Severe pea-size nodules on backs of forearm and elbows. Nasal Smears full of B. Lepræ.
- Treatment 1926. Sodium Morrhuate.
1927. Sodium Morrhuate till June.
- Condition 11-6-27. Severe nodulation of face, the nodules having a full appearance and the face tending to be leonine. Nipples hypertrophied. Skin of left elbow much thickened. Has lately had fever.
- Treatment 20-6-27. Three per cent intramuscular Sodium Hydnocarpate.
- Condition 21-12-27. General health very good. Nodules on face very much smaller. Several nodules on forearm and elbow disappeared.
- No. 6. Funzi Leper No. 5. Admitted 4th March, 1927. Age 15, Sex Male.
- Condition 4-3-27. Pea-size plaques on both cheeks, ears, lips and nostrils. Thickened skin. Elephantiasis of legs.
- Treatment 1927. Sodium Morrhuate till June.

- Condition 26-6-27. Large nodules on face. Infiltration of ears. Elephantiasis of both feet. Nipples much raised. Thickening of skin over elbow.
- Treatment 20-6-27. Three per cent intramuscular Sodium Hydnocarpate.
- Condition 21-12-27. At first local improvement but treatment had lately been stopped owing to severe inflammation of eyes. Restarted on 1st December, 1927, seems better again.
- No. 7. Funzi Leper No. 132. Admitted 26th March, 1925. Age 40, Sex Female.
- Condition 26-5-26. Unknown.
- Condition 31-5-26. Plaques on cheeks and nose. Deformity of right big toe. Nasal Smears show very many well formed B. Lepræ.
- Treatment 1925. Regular Sodium Morrhuate.
1926. Regular Sodium Morrhuate till June.
- 1926 June Muir's E.C.C.O. till June, 1927.
- Condition 11-6-27. No active ulceration. Thickening of skin on backs of elbows. The nodules on the face have almost completely disappeared and there only remains a slight semi-circular rim of infiltration round the nostrils. Anæsthesia nil. Nasal Smears:—here and there is a cell completely filled with much broken up B. Lepræ, but the picture is improved out of all knowledge to that of 31st May, 1926.
- Treatment 20-6-27. Three per cent intramuscular Sodium Hydnocarpate.
- Condition 21-12-27. General health much improved under treatment but a relapse occurred after she became pregnant.

At the end of February the Leper Settlement at Nduuni in the North of Pemba Island was evacuated and the inmates to the number of fifteen—ten men and five women were brought, in accordance with their own wishes at the time, to Funzi.

There remain now only the two settlements at Pujini and Kengeja which are under the control of the Medical Officer, Chake Chake. These lepers are also being gradually transferred to Funzi as they become willing to move to the central settlement. Under present conditions, beyond supplying them with food and clothing, little else can be done. The Fufuni Settlement which consisted of three lepers who had resided together for many years in a remote spot has ceased to exist, two having died and the survivor gone to Kengeja. With the completion of the building programme and the installation of two nurses on the island with consequently more regular treatment and systematic care of the lepers, both as regards their physical and mental needs, the year under review is a milestone in the history of leprosy and its prevention in the Protectorate of Zanzibar.

The following table compares particulars of Funzi Settlement with the previous year.

FUNZI LEPER SETTLEMENT.

	1926.			1927.		
	M.	F.	Total.	M.	F.	Total.
Remaining on 1st January ...	51	39	90	63	45	108
Admitted during the year ...	22	12	34	14	6	20
Died during the year ...	5	5	10	8	4	12
Discharged during the year ...	4	—	4	2	1	3
Remaining on 31st December ...	62	46	108	77	51	128
Escaped during the year ...	4	—	4	—	—	—
Transferred from Nduuni ...	—	—	—	5	5	10

The following table shows the numbers of lepers of each sex segregated in the different settlements at the end of 1926 and 1927.

	1926.			1927.		
	M.	F.	Total.	M.	F.	Total.
Funzi ...	63	45	108	77	51	128
Nduni ...	11	5	16	—	—	—
Pujini ...	17	17	34	16	14	30
Kengeja ...	8	11	19	8	11	19
Fufuni ...	3	—	3	—	—	—
Total ...	102	78	178	101	76	177

APPENDIX III.

CONTROL OF OPIUM.

The number of registered habitués receiving the controlled issue of opium is now 95 as against 109, at the end of 1926 and the average monthly consumption has decreased from 2 lbs. 1 oz. to 1 lb. 13 oz.

The following table shows the caste, race, community or religion and sex of those on the register at the close of 1927 compared with 1926.

TABLE.

Nationality		Males	Females	1926	1927
				Tolas	Tolas
Ismaili Khojas ..		6	14	25	20
Sunni Mohamedan ..		17	8	28	25
Ithnasheri Khojas ..		5	4	9	9
Hindoo ..		..	..	1	..
Baluchi ..		1	..	2	1
Swahilis ..		26	2	31	28
Arab ..		8	..	9	8
Persian ..		1	..	1	1
Shihiri ..		1	..	1	1
Comorians ..		2	..	2	2
Total ..		67	28	109	95

APPENDIX IV.

NINTH ANNUAL REPORT OF THE ZANZIBAR MATERNITY ASSOCIATION
FOR THE YEAR ENDED 31ST DECEMBER, 1927.

Steady progress can be recorded during the year under review.

General.—Two hundred and fifty maternity cases were attended by the Association midwives in and outside the Maternity Home, as compared with 262 cases in 1926. In 46 instances attendance was rendered free, and in 25 at reduced rates. Of the total number of cases treated during the year, 70 were Arab or African—the same number as in 1926—and 180 belonged to other nationalities.

Staff.—The Association midwives, Mrs. Neuman, Miss Locket and Mrs. Aranki rendered sterling work throughout the year. Two Arab pupil midwives—both members of well-known families—who were brought under indenture training in October of last year have made satisfactory progress.

The Maternity Home.—The out-patient department for the treatment of ante-natal, post-natal cases and of diseases in general, which was opened in May 1926 on the ground-floor of the Home, has proved a great success as will be seen from the figures given in Appendix VI.

Financial Position.—A statement of accounts for the year, and a statement of receipts and expenditure for the period 1920 to 1927, are given in the appendices IV and V.

Appendices showing in detail the activities of the Association in 1927 are given below.

P. SHELDON,

Honorary Secretary.

APPENDIX I.

Births attended by the Association Midwives during 1927.

Nationality.	Association Records.			Births registered at the Health Office
	Births.	Abortions.	Total.	
Arabs	... 17	—	17	35
Swahilis	... 35	9	44	15
Comorians	... 8	—	8	8
Shihiris	... 1	—	1	7
Fohoras	... 42	4	46	41
Goans	... 11	—	12	29
Hindoos (other than Bhattias)	... 4	—	4	
Bhattias	... 18	2	20	66
Itinashari Khojas	... 79	2	81	64
Other Indian Mohammedans	... 11	1	12	37
Parsees	... 2	—	2	2
Seychellians	... 1	—	1	2
Greeks	... 1	—	1	1
Anglo-Indians	... —	—	—	1
Indian Christians	... 1	—	1	—
	-----	-----	-----	-----
Total	231	19	250	308
	-----	-----	-----	-----

APPENDIX II.

Comparative statement of work done by the Association.

	1919	1920	1921	1922	1923	1924	1925	1926	1927
Arabs	... —	—	20	13	21	31	27	18	17
Swahilis	... —	—	11	11	12	18	18	38	44
Comorians	... —	2	6	6	4	6	7	12	8
Shihiris	... —	—	—	1	4	2	3	2	1
Persians	... —	—	—	—	—	2	—	—	—
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total	... —	2	37	31	41	59	55	70	70
Foreign Communities	... 46	59	55	147	96	182	197	196	180
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Grand Total	... 46	61	92	178	137*	241*	252	266	250
	-----	-----	-----	-----	-----	-----	-----	-----	-----

*Note.—Total cases including abortions in 1923 and 1924 were 151 and 250 respectively.

APPENDIX III.

Statement showing the number of cases treated free or at reduced rates under each nationality during the year 1927.

	Free.	Reduced rate.
Swahilis	44	—
Arabs	—	8
Comorians	1	4
Goans	—	5
Hindoos	1	5
Indian Mohammedans...	—	1
Indian Christian	—	1
Seychellians	—	1
Total	46	25

APPENDIX IV.

Receipts and Expenditure of the Zanzibar Maternity Association from 1920 to 1927.

Year.	Receipts.			Expenditure.		
	Rs.	as.	ps.	Rs.	as.	ps.
1920	8,274	8	0	5,969	6	6
1921	9,148	0	0	6,775	4	3
1922	9,848	0	0	7,405	4	3
1923	11,487	13	9	8,077	0	9
1924	14,956	4	0	13,472	12	9
1925	14,259	10	6	16,836	13	6
1926	15,300	15	0	24,621	12	6*
1927	15,787	0	0	14,189	14	0

*Includes Rs. 9,592-5-2 borne by the Association of the cost of building the Maternity Home.

APPENDIX V.

Mwembeladu Maternity Home.

Confinement and other cases treated at the Home in 1927.

Nationality.	Confinements.	Miscarriages.	Total.
Swahili	24	7	31
Arabs	2	—	2
Comorians	3	—	3
			36

Out-Patients.

New cases treated	...	5,982
Repetitions (excluding new cases)	...	12,598

APPENDIX VI.

THE ZANZIBAR MATERNITY ASSOCIATION.

Statement of Receipts and Payments for the year 1927.

	Rs. as. p.	Rs. as. p.	Rs. as. p.
Balance brought forward			
Receipts :—			
Subscriptions	4,620 0 0		
Fees	3,082 0 0		
Donations	150 0 0		
Miscellaneous Receipts	435 0 0		
Government Grant	7,500 0 0		
	<u>15,787 0 0</u>		
Payments :—			
Salaries	11,866 0 0		
Servants	132 0 0		
Rent	1,500 0 0		
Contingencies	73 8 0		
Uniforms for Midwives	36 10 0		
Equipment for Midwives	0 12 0		
Maternity Home—			
Servants	420 0 0		
Contingencies	133 0 0		
Equipment	28 0 0		
	<u>14,189 14 0</u>		
Balance—			
Cash at Bank	2,559 8 9		
Cash on Fixed Deposit, N.B.I.	4,000 0 0		
	<u>6,559 8 9</u>		
Total Rs.	20,749 6 9	Total Rs.	20,749 6 9

A. A. ALBUQUERQUE,
Hon. Treasurer.

. ANNUAL VETERINARY REPORT.

FOR THE YEAR 1927.

SECTION I.—ADMINISTRATION.

A.—STAFF.

The Veterinary Staff of the Protectorate consists of:—

Veterinary Officer	1
Assistant Veterinary Officer	1
Veterinary Cadets	3
Attendants	14

Mr. Shah Mohammed Khan returned on 23rd September from combined privilege and study leave spent in Europe during which time he took an advanced course in Veterinary Science at the Royal Veterinary College.

B.—FINANCIAL.

(a) The expenditure for the totalled Rs. 17,594-85.

(b) The revenue from Veterinary Services totalled Rs. 17,970-39.
The revenue is derived from the following sources:—

	Rs.	Cts.
Cattle importation and exportation fees	5,513	00
Veterinary Hospital	...	161 75
Abattoir fees	...	6,356 00
Landing of Cattle	...	2,343 09
Wharfage charges for landing cattle	...	545 85
Rent for Mji Mpia dairy sheds	...	2,551 00
Rent for dairy shed sites at Mji Mpia	...	20 00
Goat lairage at Gulioni	...	220 00
Cremation fees	...	260 00

Total Rs. 17,970 39

EXPENDITURE ON NEW BUILDINGS, REPAIRS, ETC., DURING THE YEAR 1927.

	Rs.	Cts.
Mji Mpia Dairies	...	12 04
Cattle pen at Pigaduri	...	759 25
Shed at Pigaduri	...	37 85
Dipping tank at Pigaduri	...	1,266 05
Goat shed at Kisiwandui	...	53 31
Gulioni Abattoir	...	149 12

Total Rs. 2,277 62

SECTION II.—DISEASES OF ANIMALS.

DISEASES OF CATTLE.

Rinderpest.—There was an outbreak of this disease at Mji Mpia Dairy beginning on June 30th, and involving some 400 cows and calves. The source of the infection was undoubtedly some recent importations from Kenya. These were imported on June 4th and detained for 14 days in the Cattle Quarantine Station. They all (thirteen of them) bore the A.M. brand (i.e., actively immunised against rinderpest) but nevertheless the disease appeared first among these animals. Immediate steps were taken to prevent the spread of infection and serum inoculations was given to 545 animals. The mortality, about 10 per cent, was accounted for mostly by locally bred stock.

The Department was fortunate in obtaining the services of Mr. Hornby, Pathologist to the Veterinary Department of Tanganyika Territory, who happened to be in the Protectorate at the time, and rendered invaluable assistance.

East Coast Fever.—There were three outbreaks of the disease during the year. One at Mji Mpia Dairy and two in the Cattle Quarantine Station at Pigaduri. Details are as follows:—

1. On January 21st five grade cows at Mji Mpia Dairy were reported to be sick and on examination blood and gland smears proved to be positive for East Coast Fever. As these animals had been some time in the dairy and had been dipped regularly at five days intervals it was not understood at first how they could have contracted the disease. But on further investigation it was discovered that the owner had been in the habit of washing each cow with soap and water after it had been dipped, being under the impression that by so doing he would rectify the slight decrease in milk yield caused by dipping. The loss of his cows convinced him, and others, that the security given by dipping was more than sufficient compensation for the slight loss of milk.

2. On February 4th some animals, of a consignment of 24 cows and 22 calves imported a week previously from Kenya sickened in the Cattle Quarantine Station. Examination of smears proved to be positive for East Coast Fever and 11 cows and 8 calves died.

3. On October 6th 13 cows and 7 calves were imported from Kenya and the first case of East Coast Fever occurred 8 days later. Other cows and calves sickened and a total of 8 cows and 6 calves died. This outbreak was one of combined East Coast Fever and Red Water Fever.

Trypanosomiasis.—Local Stock. Forty-eight cattle were examined and four shewed *T. congolense*.

Trypanosomiasis.—Imported Stock. One hundred and thirty-nine cattle imported from Kismayu were examined and three showed parasites of *T. uniformi* type.

East Coast Fever.—Imported Stock. The gland smears of 73 animals were examined and 26 proved positive on microscopical examination.

Piroplasmosis.—Thirteen cows imported from Kenya were examined and nine shewed *P. bigeminum* in blood smears.

Distomiasis.—A few cases were discovered, after slaughter, among cattle imported from Tanganyika Territory.

Echinococcosis.—Cysts have been seen in the lungs and livers of slaughtered milch cows, especially of the Indian breed.

DISEASES OF GOATS AND SHEEP.

Scabies.—Some cases were found in imported sheep.

Hæmonchiasis.—A common parasite of imported and local goats and sheep. Sometimes when the animals have lost their vitality owing to sickness or bad feeding this parasite gives rise to Gastro-enteritis and ultimately death.

Pleuro-pneumonia of Goats.—Some cases of it were detected in imported goats.

Oesophagostomiasis.—"Pimply-gut," very common in local goats.

DISEASES OF EQUINES.

Horse sickness.—No case reported.

Glanders.—No case reported.

All horses and mules imported into the Protectorate and not accompanied by satisfactory certificates are subjected to the mallein test.

Ulcerative Lymphangitis.—Diagnosed in a horse. This animal was treated and recovered.

Tetanus.—One case detected in a donkey. The animal was destroyed.

Trypanosomiasis.—The blood smears of 50 local donkeys were examined and four returned as positive for *T. congolense*.

DISEASES OF CANINES.

Piroplasmosis.—Two dogs proved positive on blood examination; these were treated and recovered.

Ankylostomiasis.—The Sanitary Department destroyed a large number of pariah dogs by poisoning. Out of these 17 were post-mortemed and one dog was found infected with *A. caninum*.

F. immitis.—Was found in the heart of two dogs.

Rabies.—No case reported or detected.

DISEASES OF BIRDS.

Ascaris mystax.—Three chickens examined and one found infected.

SECTION III.—MJI MPJA COWSHEDS.

No more sheds were constructed by the Government during the year under review. The ten existing sheds were occupied by 181 cows 10 bulls and 152 calves on 31st December, 1927.

Two other cow-keepers were removed from the town owing to the insanitary condition of their sheds and permitted to build temporary sheds on vacant Government ground near Mji Mpia. 20 cows, 1 bull and 27 heifers and calves were accommodated in these sheds at the end of the year.

All the stock kept at Mji Mpia is regularly and systematically dipped at a five days' interval.

The total number of dippings performed during the year was 13,355.

SECTION IV.—MEAT INSPECTION.

All meat sold in the Market has been killed at the Government Abattoir which is under the personal supervision of the Veterinary Officer.

Animals for slaughter are brought to the Abattoir before 3-30 p.m. on the day before slaughter. Here an ante-mortem inspection is made and animals unfit for slaughter are rejected.

Slaughtering begins at 4 a.m. and the dressed carcasses are afterwards examined by the Veterinary Officer before removal to the Market. "Measly" meat if only slightly infected is thoroughly boiled on the premises and sold at a cheap rate, otherwise the carcass is burnt.

During the year 45,760 animals were slaughtered and of these 5,454 were partially condemned and 76 were wholly condemned.

Occasionally sanction is given by the Senior Commissioner, after consultation with the Sanitation Officer to slaughter an animal (usually a goat) on private premises for religious purposes. These animals are inspected by the Veterinary Officer before being slaughtered.

SECTION V.—PIGADURI QUARANTINE STATION.

All live stock imported into the Protectorate undergoes a period of Quarantine. In the case of cattle this is a fortnight, whilst goats and sheep are detained for 5 days. Horses and mules imported and not accompanied by a satisfactory Veterinary certificate of health are subjected to a "Mallein" test.

Blood films are taken from a large number of animals imported from Lamu and Jubaland and microscopically examined for trypanosomiasis. Animals showing infection are not allowed to be removed from Quarantine and are forthwith slaughtered. The meat is passed for sale.

Dogs and cats are not allowed to be imported unless accompanied by a certificate from a qualified Veterinary Surgeon to the effect that the animal is free from rabies. Failing this the animal is quarantined for six months.

The dipping tank was continuously in use throughout the year, cattle being dipped at a three days interval. The number of dippings amounted to 8,337.

SECTION VI.—LAIRAGE FOR GOATS.

There are ten sheds, with accommodation for 500 goats, which were leased to butchers for housing their slaughter goats and sheep. There were complaints from the lessees, that the cement floors were slippery and that animals received severe injuries due to falls; it was decided to overcome this drawback by allowing them to spread a 6-inch deep layer of sand, to be changed at frequent intervals. Since then no complaints have been received.

SECTION VII.—RECOMMENDATIONS.

1. A small dispensary should be built at Mji Mpia Dairy for use in case of emergency and for the every day treatment of sick animals. There are 400 odd cattle on the dairy premises and at present no facilities exist there for their treatment.

2. Proper drainage is absolutely necessary if a really pure milk supply is ever to be obtained from this dairy.

SHAH MOHAMMED KHAN,

Veterinary Officer.

TABLE I.

Comparative table of deaths in Zanzibar Town and Quarantine Station during the three years 1925-1927.

	1925	1926	1927
Milch cows	57	59	96
Calves	52	52	79
Cart Bullocks	21	21	13
Goats	258	136	25
Sheep	5	21	—
Horses	4	3	2
Donkeys	31	19	23
Mules	7	8	1
Buffalo	—	1	—
Camels	4	—	1
	<hr/> 439 <hr/>	<hr/> 320 <hr/>	<hr/> 240 <hr/>

The increase in the number of deaths among cows and calves was due to outbreaks of Rinderpest and East Coast Fever as reported in Section II. There is a noticeable decrease of mortality in imported goats and sheep. In previous years pleuro-pneumonia was mostly responsible for the heavy losses but fortunately during the year under review these animals arrived free from this sickness. No deaths were reported in sheep.

TABLE II.

Comparative table of animals imported during the three years 1925-1927.

	1925	1926	1927
Oxen	4,455	3,195	2,666
Cows	121	91	67
Calves	113	67	53
Goats	17,931	12,100	6,105
Sheep	5,020	3,657	2,849
Horses	4	14	—
Mules	20	7	—
Donkeys	21	18	23
Camels	18	14	—
Dogs	4	2	—
	<hr/> 27,707 <hr/>	<hr/> 19,165 <hr/>	<hr/> 11,765 <hr/>

It is evident from the above table that the importation of animals during the past year has considerably decreased as compared with the previous two years, there being a difference between the imports of 1925 and 1927 of over seventeen hundred cattle, twelve thousand goats, and two thousand sheep. In previous years large number of animals used to arrive by dhows during the north-east monsoon from Arabia, Socotra and various Somali ports but no such stock arrived in 1927.

The Socotran cows, which more or less resemble Jerseys in appearance, were once very popular with cow-keepers here. But these cows are not heavy milkers and as soon as high grade milch cows from Kenya began to be imported, and were found to yield at least three times as much milk, their popularity diminished.

TABLE III.

Comparative table of animals exported during the three years 1925-1927.

		1925	1926	1927
Oxen	...	501	345	267
Cows	...	4	31	1
Calves	...	—	—	—
Goats	...	1,931	619	312
Sheep	...	305	20	31
Camels	...	—	3	12
Horses	...	7	1	3
Mules	...	—	—	—
Donkeys	...	195	47	32
		2,943	1,066	658

It will be seen from the above table that exports, too, have fallen considerably as compared with the previous two years.

TABLE IV.

Table showing the number of animals treated at Veterinary Hospital, Kisiwandui, during the year 1927.

Horses	...	248
Mules	...	22
Donkeys	...	471
Cows	...	51
Calf	...	1
Bulls	...	81
Camels	...	8
Dogs	...	228
Cats	...	13
Rabbit	...	1
Fowls	...	5
Monkey	...	1
Parrot	...	1
Total		1,131

TABLE V.

Table showing the number of animals examined and slaughtered in the Government Abattoir during 1927 compared with the previous two years:—

Species.	Slaughtered in Government Abattoir.			Carcases Condemned.					
				Wholly.			Partially.		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Oxen	3,496	2,914	2,503	119	58	37	2,264	2,413	1,792
Cows	52	47	49	..	..	..	19	17	14
Calves	15	47	37	..	..	..	..	2	10
Goats	15,415	12,855	10,856	62	156	31	3,759	3,557	2,734
Sheep	3,470	3,282	2,311	18	4	8	1,363	1,695	101
Camels	9	3	4	..	..	..	4	4	3
Buffaloes	2	..	..	..	..	..	..	..	..
Total	22,459	19,149	15,760	199	218	76	7,409	7,688	5,454

Thirty-seven oxen carcasses were condemned for c. bovis, and 31 goats and 8 sheep for Pleuro-pneumonia and emaciation.

TABLE VI.

Table showing the number of examinations carried out in the Veterinary Laboratory during 1927.

Trypanosomiasis (local stock):—

	Number Examined.	Positive.	Negative.
Cattle	... 52	4	48
Camels	... 77	—	—
Donkeys	... 50	4	46
Horses	... 4	—	4
Dogs	... 7	—	7
Buffalo	... 1	—	1

Trypanosomiasis (imported stock):—

Cattle	... 142	3	139
Donkeys	... 8	—	8

East Coast Fever (local stock):—

Cows	... 59	34	25
Calves	... 13	7	6

East Coast Fever (imported stock):—

Cows	... 45	18	27
Calves	... 25	6	19
Bullocks	... 3	2	1

Piroplasmosis (imported stock):—

Cows	... 13	9	4
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Filaria Immitis:—

Dogs	... 17	1	16
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Ankylostomiasis:—

Dogs	... 17	1	16
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Piroplasmosis:—

Dogs	... 2	2	—
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Ulcerative Lymphangitis:—

Horse	... 1	1	—
Donkeys	... 2	—	1

Coccidiosis:—

Rabbit	... 1	1	—
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Ascaris mystax:—

Chickens	... 3	1	2
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TABLE VII.

Table showing the number of Post-Mortems during the year 1927:—

	Number Performed	E. C. Fever	Typhoid	Malnutrition	Septicæmia	Undiagnosed	Colic	Paralysis	Tetanus	F. imitris and A. cutinum	Salt water poisoning	Pleuro-pneu- monia	General debility
Oxen	1	...	...	...	...	...	...	...	...	...	1	...	...
Cows	48	30	1	...	6	8	...	1	...	...	...	1	1
Calves	2	...	...	2	...	...	...	...	...	...	...	...	...
Camels	1	...	...	...	1	...	...	...	...	...	...	...	...
Buffaloes	...	...	...	...	...	...	...	...	...	...	...	...	...
Goats	...	...	...	...	...	...	...	...	...	...	...	...	...
Sheep	...	...	...	...	...	...	...	...	...	...	...	...	...
Fowls	1	...	...	...	...	1	...	...	...	...	...	...	...
Donkeys	3	...	1	...	...	...	1	...	1	...	...	...	...
Dogs	17	...	...	...	...	...	...	...	...	17	...	...	...
Bulls	6	1	1	...	2	2	...	...	...	...	...	...	...
Total	79	31	3	2	9	11	1	1	1	17	1	1	1

Zanzibar Protectorate.

REPORT ON THE AGRICULTURAL DEPARTMENT FOR THE YEAR 1927.

SECTION I.

EUROPEAN STAFF.

The personnel of the European Staff during the year under review was as follows:—

Rank.	Name.	Period in Residence.
Director & Government Chemist.	V. H. Kirkham, F.I.C., B.Sc., Dip. Agric. (Cantab.)	Whole year.
Assistant Director.	A. C. Barnes, F.I.C., B.Sc., A.M.I.Ch.E.	From July 27th
Agricultural Officers.	Harold Waterland, Dip. Agric. (Harper Adams)	From 10th August
	J. E. Baker, Cert. Agric. (Seale-Hayne.)	To August 28th
Manager of Plantations	J. R. P. Soper, B.A. (Cantab.) (acting)	Whole year
°Agricultural Assistant.	Graham Tomson,	From 9th July
°Horticulturist.	H. Pearson.	To May
°Mycologist.	K. E. Toms.	To August 28th
Assistant Government Chemist.	Miss E. J. Welsford, M.B.E.	To February 27th
	L. W. Raymond, B.A. B.Sc., A.I.C., A.R.C.S.	To August 28th

*These posts have been abolished.

The year under review has been marked by a number of changes in the staff and a certain degree of re-organisation whereby the Government Plantations have been constituted into a definite section of the Department under the management of an officer specifically appointed for that purpose.

Mr. A. C. Barnes was appointed Assistant Director, and assumed duty on July 27th. From August 28th to the end of the year he acted as Assistant Government Chemist in addition to carrying out the normal duties of his office

Mr. L. W. Raymond acted as Assistant Director from January 1st to July 26th in addition to his normal duties.

Mr. Graham Tomson rejoined the department in the capacity of Manager of Plantations, being transferred from Tanganyika Territory on the 9th July.

Messrs. L. W. Raymond and J. E. Baker attended the Imperial Agricultural Research Conference in October.

Mr. J. R. P. Soper was seconded for duty from the Education Department, and acted as Agricultural Officer, Zanzibar, for the whole of the year.

Mr. K. E. Toms left the service of the Zanzibar Government owing to the abolition of the office of Horticulturist and later in the year was appointed Assistant Manager of Plantations, Amani, Tanganyika Territory.

Mr. T. D. Rutter B.Sc., A.I.C.T.A. was appointed an Agricultural Officer on December 8th, but did not arrive in the Protectorate until after the close of the year.

Reference was made in the last year's report to the lamentable death of Mr. H. Pearson.

The European Staff now consists of the Director, the Assistant Director, the Manager of Plantations, 4 Agricultural Officers and the Assistant Government Chemist.

SECTION II.

THE CLOVE INDUSTRY.

Accounts of the clove harvesting work of the year will be found in other sections of this report, and particulars of quantities and market prices compared with former years are given in Tables II and III of the Appendix.

Drying.—The heavy and persistent rain during the last quarter of the year was a severe handicap to the clove harvesting operations. Great difficulty was experienced not only in picking the cloves, but in drying them satisfactorily after they were picked. Many growers did succeed in producing cloves of good quality by the exercise of great vigilance and care, but the greater proportion of the crop marketed was of poor quality. Thus the work involved in the administration of the Agricultural Produce (Adulteration) Decree was considerable, and all engaged in the industry could not help but realise the need for some method of drying which would overcome the difficulties occasioned by persistent wet weather.

“Artificial” drying processes can be applied to the problem, but by reason of the nature of the material to be dealt with, the working conditions would require very careful control. This was exemplified experimentally in December, 1927, when trial was made with a small natural draught “Chula” copra dryer. The trays of the dryer were covered with matting to enable them to carry cloves, and were charged with green cloves to the depth of $\frac{1}{2}$ -inch to $\frac{3}{4}$ -inch. The furnace was fired with a mixture of coconut husk and shell. It was found that the temperature of the cloves in the lower trays above the furnace

rose rapidly, while the temperature of the others rose very slowly; and whereas one tray of cloves was completely dry in three hours, others more distant from the source of heat were practically unchanged in this time. The whole of the green cloves—some 600 pounds weight in all—were dried satisfactorily by moving the trays towards the furnace end as the cloves there became dry and ready for removal. Though the actual experiment was disappointing, it indicated that with a properly designed hot air dryer with induced draught it would be possible to dry cloves rapidly and effectively with but a small loss of essential oil by volatilization. Cloves of good colour, and low moisture content were obtained as a result of this trial, but laboratory examination indicated that some 2 per cent of oil had been lost by volatilization due to the overheating of the material at the furnace end of the dryer.

It is most unlikely that any individual grower would be able to consider the installation of a hot air dryer, though it may be that the Clove Growers' Association will later be able to give attention to the question of operating mechanical dryers on a co-operative basis if other projected attempts to solve the problem fail to achieve success.

There can be little doubt that natural air drying under good weather conditions is the simplest, cheapest and most satisfactory method of preparing dried cloves of good appearance without serious loss of essential oil in the process. The adverse weather conditions often experienced at the time the cloves are ready for picking makes drying a matter of great difficulty under present conditions, with open drying grounds supplemented by mats in the busy season. If all cloves after picking could be protected from rain, while still keeping them in very shallow layers, a product of good appearance and colour would be assured. Work is proceeding on these lines, and in a subsequent report it is hoped to record satisfactory results of experiments.

Another possible way of overcoming the difficulty is to apply an artificial conditioning process to cloves already partly dried in the usual way. It is not unusual on inspection to find cloves regarded as ready for sale in the rainy season when they still contain 20 to 24 per cent of moisture. They require further drying before they are fit to be exported. By the courtesy of the Director of Agriculture, Kenya, trial was made of a part of the maize conditioning plant at Kilindini, to see if it could be used as a conditioner for such cloves. The section of the plant used, was, however, unsatisfactory, and as it was inconvenient to utilize the whole plant for a trial, the experiment was unsuccessful, but inconclusive. It should not be difficult to design a conditioning plant which would fulfil the requirements of speedy and satisfactory drying with a minimum of loss of oil. Further investigations are deferred until the work on natural air drying is more advanced, and experimental inquiry in the laboratory has elicited information on the rate of loss of moisture and essential oil under given conditions of temperature and humidity.

SECTION III.

THE CLOVE GROWERS' ASSOCIATION.

The year 1927 is particularly noteworthy by reason of the formation of the Zanzibar and Pemba Clove Growers' Association. It is early to state what the effect of this organisation on the Agricultural industries of the islands may be, but the first season's working has been very encouraging both to the members and to Government. Primarily formed to assist in the reduction of the cost of production of the staple product of the Protectorate, the Association bids fair to develop into an agricultural organisation working on more general lines, and concerned with the production, transport, and local marketing of other products of the soil.

The principal activity of the body during the season under review was the control of rates of pay for clove picking with the object of securing a more even distribution of labour during the clove harvest. An important effect of such control is to prevent to a large extent the richer plantation owners from obtaining an unreasonable proportion of labour by reason of their ability to offer greater attractions to pickers.

It may be argued that such an effect is prejudicial to the interest of many of the growers, and that they should be permitted to bid in an open market for the labour they require. Actually, the loyalty with which the great majority of producers adhered to the resolution to standardise rates of wages in both Zanzibar and Pemba, and the fact that in very few cases were complaints made regarding shortage of pickers, indicate that the growers appreciated the advantages of united action and the pickers realised the strength of the organisation which had laid down the rate of pay. Under any circumstances, some individual complaints are certain to be made regarding the difficulty of getting pickers. Investigation invariably shows that one or more of the followings reasons lie at the root of the trouble:—(a) the grower is a bad employer; (b) the plantation is overgrown with bush, and the trees therefore difficult of access; (c) the crop is small; (d) the trees are high, difficult to climb and bearing chiefly at the top.

The determination with which the Pemba growers refused to advance the rate, even when pickers from Zanzibar refused to work there, but returned almost immediately, is particularly noteworthy. District Committees are empowered to advance rates in their districts, and that they did not do so until the end of the harvest, and then only in Zanzibar, shows that members were well pleased with the returns they obtained. One pice per pishi of green cloves is equivalent to half a rupee per frasila of dried cloves, so that the standard rate for picking for 1927-28 (5 pice per pishi) was not unreasonable either from the pickers' or the growers' point of view when it is remembered that the crop was a heavy one and the market price was lower than for some years. At this rate a clove picker can earn a rupee a day without difficulty; a wage which, considering the nature of the work,

is not unreasonable, and compares favourably with the rate paid for other labour in both islands. An expert picker in a year of a good crop can harvest 20 pishi of green cloves in a day without difficulty thereby earning one rupee nine annas.

Reviewing the position created in Pemba last season, it appears advisable to pay pickers there a slightly higher rate, and meetings of the Association there unanimously decided to pay 1 pice more per pishi than Zanzibar at any given time. This arrangement will, it is felt, provide sufficient encouragement for pickers to remain there for the harvest, rather than to return to Zanzibar as they did last season.

An investigation of the possibilities of co-operative transport and marketing was commenced on November 1st in Zanzibar. Two receiving stations were opened, one at Mahonda and one at Koani, and growers were encouraged to deliver their produce at these places for transport to Town for sale. At the time of delivering, the cloves were weighed and an advance of money given on the spot to the extent of about 90 per cent of the actual duty unpaid value. Bags were returned to the owner, and the cloves bulked in accordance with their quality; superior, medium and inferior grades being bagged separately and marked accordingly. As soon as a sufficient quantity had been thus collected, transport to Town was arranged and sale effected from time to time through a broker. The balance of the money realised after payment of duty and deduction of charges was paid to the owner at the collecting station on production of a ticket given to him at the time of delivery.

In other cases, where larger consignments were involved, motor lorry transport from the plantation to Town was arranged, and the cloves sold through a broker. Transport, handling and brokerage charges were deducted from the duty paid sale price, together with a small commission, and the balance paid to the owner as before. The amount of produce handled up to December 31st is not indicative of the extent to which the scheme developed early in 1928, so that this report must of necessity be incomplete in so far as it deals with the Clove Growers' Association. It may, however, be said that the scheme for co-operative transport and marketing has appealed to the growers, and that it is likely to develop considerably in the coming season. The small grower has, perhaps, felt the advantages to a proportionately greater extent than the larger plantation owner, by reason of the fact that he has obtained good prices without difficulty by marketing collectively. Individual marketing of small quantities of produce does not ensure that the owner receives a price commensurate with the quality of his produce, whereas the arrangement adopted whereby cloves of the same grade from a number of people were bulked and sold together resulted in the individuals getting a relatively higher return than usual.

Those growers who have marketed their cloves through the Association during the past season have not only received a higher proportion of the realised price, but the prices obtained have invariably

been little more than the average market price at the time for the particular quality sold. The effect of this section of the activities of the Association has been felt in many instances by growers selling to licensed dealers, who have, it is stated, given more generous treatment than hitherto.

There can be no doubt that many growers are not free agents, in that they are in debt to dealers, merchants, and money lenders who thereby have a lien on their crops. Such growers, however much they may wish to make use of the Association as their medium for marketing, are thus prevented from doing so. The effect of providing simple and more profitable means for disposing of the produce is likely to lead to an improvement in the treatment accorded to this unfortunate class of producer.

Another direction in which work of this nature is of value to the industry is that all produce offered for sale through the Association is subjected to close examination at the time of delivery. Only dry cloves, free from excess of foreign matter are received and stems are required to be satisfactorily clean and dry.

ZANZIBAR AND PEMBA CLOVE GROWERS' ASSOCIATION.

Statement showing amount of produce handled at Koani and Mahonda and prices and amount realized to 31st December, 1927.

	Cloves.	Stems.	Prices Realized.				Amount Realized.	
			Cloves.		Stems.			
			Frs. lbs.	Frs. lbs.	From	To			From	To	Rs.	Cts.
Koani	280.09	53.30	Rs.	Rs.	Rs.	Rs.		
Mahonda	742.12½	93.10	10/-	12/6/-	2/7/-	2/12/-	9,182.63	
Total	1,022.21½	147.05						

SECTION IV.

ANNUAL REPORT OF THE AGRICULTURAL OFFICER, ZANZIBAR, 1927.

The report is divided into three parts, viz:—

Clove inspection.

Gardens.

Outside work.

Clove Inspection.—During the year the Agricultural Produce (Adulteration) Decree was enforced for the first time; the methods of application were therefore of a more or less tentative nature, but on the whole the working has been satisfactory, and no complete deadlocks such as were experienced in 1926 occurred. The statistics

given below refer solely to the Pemba crop, upon which most of the attention has been concentrated. In past years this greater portion has been distinctly inferior to that of Zanzibar Island, but the recent levelling up of prices shows that the Decree has not proved itself entirely unsuccessful. Another reason for concentration on the Pemba crop arises from the question of conditioning facilities: at Gulioni the weighing clerks can refuse a wet consignment and the merchant can remove it just outside where it is dried quickly and easily under the supervision of an askari; in the Main Customs there are no such convenient spaces, and the self-guarantee system was instituted whereby the merchant undertakes to dry his 75 per cent in his godown, and the Customs authorities remove their 25 per cent to the old school playground. All guarantee cloves have to be passed by the inspector before they may be removed from the place of drying. Apart from these activities, exports have been examined from time to time, and no consignment has been wet enough to hold up. Towards the end of the year when the incessant rain caused the production of quantities of very inferior cloves, several dhows were boarded and the owners were forbidden to land the cargo. This work has resulted in a general improvement in the quality of the produce.

QUARTERLY CLOVE EXAMINATION RETURNS (PEMBA CLOVES 1927).

	Inspected		Passed		Passed after analysis		Guarantees	
	Bags	Consignments	Bags	Consignments	Bags	Consignments	Bags	Consignments
1st Quarter..	97,316	1,327	80,218	1,114	7,489	87	10,124	131
2nd „ „	32,020	640	27,073	541	2,568	47	2,379	52
3rd „ „	15,771	446	13,973	397	758	20	1,010	29
4th „ „	80,484	1,256	47,898	789	3,521	50	28,740	415
Totals..	2,25,591	3,669	1,69,162	2,841	14,336	204	42,283	627

This represents a percentage of 81.3 passed.

Gardens.—In the Victoria Gardens the main features of the year's work were the laying on of a water supply and the levelling of the lawns; the latter work is not yet finished, but is going on satisfactorily, and will receive great assistance through the admirable execution of the former.

The main part of Migombani has been under pineapples which have produced an excellent crop, and some 1,500 suckers have been supplied to shamba owners. A nursery of ornamental trees has been started, most of which will probably be planted along the Mangapwani Road. In addition to this a citrus nursery has been instituted in which have been sown seeds from every available type of this genus to be found on the island, the object being to discover the best type of stock for budding.

At Mazizini a banana plot (consisting of 13 different varieties) was laid out early in the year, but as yet only one crop has been harvested.

In April some of the Binti Juina seedless orange were budded on to lime stocks; the young trees are doing well and will soon be ready for transplanting. Plots of palmarosa grass, crotalaria juncea and French beans have also been sown here.

The attempt to start a plot at Marahubi has been a failure; the tobacco, and later the simsim and ground nuts showed that the soil was far too patchy for an even stand.

Outside Work.—During the earlier part of the year, when not engaged in clove inspection, the Agricultural Officer was checking and sealing clove trees for the purposes of bonus. During August an Agricultural survey (vide infra) was started in the north of the island, but the work was suspended owing to the departure of the Horticulturist. During the latter months a cacao nursery was started at Dunga, where just over 6,000 seeds were sown; the parent seed trees were previously numbered and the progeny of each has been kept separate. At Kitumba, nurseries for coffee and *Hydnocarpus Anthelmintica* were laid down; 783 seeds of the latter tree were received from the Leprosy Research Board with a view to testing their suitability for this climate.

AGRICULTURAL SURVEY, NORTHERN DISTRICT.

The original report of this work was drawn up as a series of safaris, each covering a small part of the whole, with the result that considerable repetition was unavoidable. In this report an attempt is made to collect the observations in a more concise manner. The main objects were to find out the condition and distribution of our two main crops, to discover the extent of replanting, to observe any remarkable features of disease and to study the planting of native crops.

General Topography.—The total area covered was unfortunately limited by time; roughly speaking it lies north of the line drawn east and west along the Mahonda-Kinyasini road. For descriptive purposes it may be divided into six strips running north and south. The most easterly of these strips is composed of coral outcrop locally known as "wanda" which is useless for agriculture; approaching the next strip the "rag" becomes covered with a slightly deeper covering of soil, and under the latter category comes the whole of the Ras Nungwe promontory. The second strip is a valley extending below the fertile and heavily cultivated ridge comprising strip three which runs from Uwemba Hill to Pangani. This valley is composed of a layer of black peaty soil overlying clay; it is very swampy in wet weather and only slightly cultivated. The fourth strip merges into the third and consists of a large tract of steeply undulating country of a wild nature. Another ridge running from Pale Hill through the Donge district forms the fifth strip; it is mostly red loam and is very much overplanted, but the fertility of the soil nevertheless makes

the production of satisfactory crops possible. The sixth and most westerly strip is comprised of a low-lying, sandy, swampy stretch of land which seems incapable of yielding a remunerative return on any of the crops so far tried.

Cloves.—Broadly speaking the area under cloves is not very satisfactory. Many trees have been planted on unsuitable land; they have since been neglected, and in places they have either died out or become choked by long grass and bush. Instances of this may be found at Potowa, Pitanazako, Kivunge, Yoleni, Tindawua, Pita Ukai, Kitanda Baazi, parts of Moga and the area round Naaya, Mgambo and Kidagoni. Good clove land would appear to exist almost throughout the third and fifth strips; also at Banda Maji and south of Mgambo. Almost all this land has been planted too thickly and the trees have to compete with a large variety of other plants including the weeds from uncleared shambas. Young trees are only seen in the better areas, and here they have been planted in a haphazard way; they are mostly uncared for, and are too close to larger trees to enable them to establish a sound habit of growth.

Coconuts.—This crop is found throughout the whole area with the exception of the coral rag, and even here clumps may be seen on patches where the soil is a little deeper than the surrounding country. No place can be said to be free from gummosis entirely, but on the whole the middle-aged trees seem to be the worst sufferers. The best palms are mostly found among the clove trees on the better types of soil; in addition Mkokotoni, Shindoni, Utaani, Kidutani and Upenja may be classed as good areas together with patches round the coast and the line dividing strips five and six. The most heavily planted part is Fraser's shamba lying below Pale Hill, but this has been badly neglected of recent years and is now suffering from gummosis. Planting of young trees has been proceeding at a good rate in many places, the most prominent being along the road from Mgambo to Kinyasini and to the north of it, Mtuba, Kibuyuni and Kibaoni. All through the fourth strip and also south of Kinyasini on the rolling open country scattered palms are found of an extremely variable quality. The general impression is that on the whole the soil does not suit them as it is a black clay with a certain amount of sand. It would be interesting to investigate this and find out whether the better trees occur where there is a higher proportion of sand.

Native Crops.—The most common crop is undoubtedly the universal cassava which is to be seen everywhere in conjunction with the pigeon pea (*Cajanus Indicus*). The largest areas are found round the borders of the more fertile land, particularly at the foot of Chaani ridge. Some excellent fields of tobacco were observed in the more open spaces on the top of this ridge, but down below the standard was not so good. This crop is also found in small patches where the bush has been cleared from the coral rag and seems to thrive remarkably well considering the scanty nature of the soil in the cracks in which it is planted. On the better land it is followed by a crop

of bullrush millet. Small plots of rice are found in most of the lower lying parts of the district, but at the time of visiting the crop had just been harvested and no opinion of its quality could be formed. Good oranges are grown on the better land, but no attempt is made to separate this crop from the mixture of cloves and coconuts; mention must however be made of the exceptional quality and bearing capabilities of the trees on the Upenja plateau. The two varieties of sweet potato are also popular among the natives and grow well.

Conclusions.—A large part of clove area is poor, and the sooner it is planted with something else the better; the remainder should be gradually replanted with greater intervals between the trees, as in several places, particularly Kinyasini and Mkwajuni the present stock is old. Some good coconut shambas should be produced in a few years time from the young trees planted during recent years, but care should be taken to prevent the planting up of too much unsuitable land and also to prevent damage by fire which is at present a serious menace to the young trees. Strips two and four are practically uncultivated, and it would be a good thing if experiments could be instituted with the object of finding a suitable crop; for instance cacao might quite easily thrive on the slopes of strip four. Such expanses of uncultivated country should not be allowed to produce a crop of useless coarse grass year after year, and it is hoped to take steps in the near future to improve this state of affairs.

J. R. P. SOPER,

SECTION V.

REPORT OF THE AGRICULTURAL OFFICER, PEMBA, 1927.

Clove Harvest.—The year 1927 was marked by an unusually heavy rainfall during the months of October, November and December (i.e. 31.2 in.) which caused considerable difficulty in drying cloves, and this, coupled with inspection of produce under the Agricultural Produce (Adulteration) Decree, created some consternation amongst producers and buyers who were prevented from shipping wet cloves from Pemba.

In addition to adverse climatic conditions, some producers also experienced a shortage of labour for picking and were unable to pick their trees fully. This was due to a resolution of the Clove Growers' Association to pay not more than 5 pice per pishi for picking, to the discontent of the pickers many of whom left the island and returned to Zanzibar where they could obtain the same wages. Despite these troubles, however, there is reason to believe that the year has been a prosperous one for the shamba owner as the crop harvested was picked at a low cost, and, with better and cheaper means of transport and improved shipping facilities, a higher percentage profit was obtained than in previous years.

Agricultural Produce (Adulteration) Decree.—The Agricultural Produce (Adulteration) Decree, operated in Pemba for the first time this year. Consignments of cloves, both ashore and in dhows, were inspected and, if found to contravene the provisions of the decree, the consignors were prohibited from exporting the cloves to Zanzibar. In every instance when a consignment was held up, a sample of the cloves was taken and the moisture content determined by the Brown-Duvel Tester.

Efforts were made to prevent the shipment of wet cloves from the three principal ports, Weti, Chake Chake and Mkoani. Shipments were satisfactorily controlled at Weti and Chake Chake as these ports are connected by a motor road which enabled regular inspections to be carried out. Transport limitations, however, made it impossible to visit Mkoani sufficiently often to deal adequately with the consignments passing through that port, and considerable quantities of wet cloves were shipped from the Mkoani district, though there was a distinct improvement in this respect towards the end of the year.

In previous years Pemba cloves were inferior in quality to those of Zanzibar, consequently there was a marked difference in price between them. At the close of the year little difference in price was evident indicating better quality cloves from Pemba and the usefulness of the decree.

Survey of Young Clove Trees.—A survey of young clove trees in the Weti and Chake Chake districts was commenced in August and carried on at intervals as other duties permitted until October when it was discontinued owing to the pressure of work in connection with the clove harvest. The purpose of the survey was to determine the condition and extent of plantings of young clove trees. It was observed that while there are many young cloves about the districts, a large proportion are self-sown and growing in old clove areas where the original trees have died. Those that have been planted are generally in an unsatisfactory condition owing to the lining and planting having been badly done, and the young trees overcrowded. The young stock is not likely to contribute much towards the replacement of the old plantations, which, it is evident, can only be carried out systematically in accordance with established principles.

Government Plantations.—During December cacao and coffee nurseries were established at Makondeni and Tundaua respectively. The development of the cacao in the nursery beds was unsatisfactory. This, apparently, was due to the seed having been planted too deeply with a result that many of the seedlings were unable to lift their cotyledons out of the soil. At the end of the year the coffee seed was showing signs of germination but had not appeared above ground.

At Matangatwani the clearing of two acres of old clove land was commenced preparatory to planting with cacao.

The Government shamba at Fufuni yielded 1,427 frasslas of dry cloves, the highest yield yet recorded from the shamba, and I wish

to express my appreciation of the interest and help of the Assistant District Commissioner, Mkoani, whose assistance in obtaining pickers and in other ways made possible the harvesting of a record crop. Five pice per pishi was the rate paid for picking throughout the harvest thus establishing a record of low cost for picking in addition to a record yield.

Inspection of Plantations.—The inspection staff consisted of a sub-inspector, four assistant sub-inspectors and six rangers.

The following is a summary of the work performed:—

District.	Plantations inspected.	Bearing trees checked.	Young trees sealed.
Weti	872	22,149	41,970
Chake Chake	509	15,036	7,656
Mkoani	129	1,317	1,936
	-----	-----	-----
Total	1,510	38,502	51,562
	-----	-----	-----

The trees sealed during 1927 belonged to the following groups:—

Year of planting.	No.
1922	1,311
1923	578
1924	11,114
1925	26,615
1926	11,944

Total	51,562

Financial Assistance to Plantation Owners.—A sum amounting to Rs. 3,68,843-50 cts. was distributed to clove growers during the year as shown below:—

BONUS PAYMENTS, 1927

	Rs.	Cts.
Bonus on bearing trees	...	2,95,475 00
Bonus on young trees	...	33,545 00

Total	3,29,020	50

LOANS FOR HARVESTING, 1927.

District.	No. of loans.	Amount advanced.	
		Rs.	Cts.
Weti	218	30,560	00
Chake Chake	102	6,278	00
Mkoani	36	2,985	00
Total		39,823	00

DETAILS OF BONUS PAID ON YOUNG TREES, 1927

District.	Year.	First instalment.		Second instalment.		Third instalment.		Total.	
		Rs.	Cts.	Rs.	Cts.	Rs.	Cts.	Rs.	Cts.
Weti	1922	—	—	21	50	385	50	407	00
	1923	289	00	144	50	—	—	433	50
	1924	884	00	2,196	00	—	—	3,080	00
	1925	21,488	00	—	—	—	—	21,488	00
	1926	2,239	00	—	—	—	—	2,239	00
		24,900	00	2,362	00	385	50	27,647	50
Chake Chake	1922	2	00	16	00	—	—	18	00
	1923	—	—	—	—	—	—	—	—
	1924	40	00	1,186	00	—	—	1,226	00
	1925	4,654	00	—	—	—	—	4,654	00
	1926	—	—	—	—	—	—	—	—
		4,696	00	1,202	00	—	—	5,898	00
Total		29,596	00	3,564	00	385	50	33,545	50

SECTION VI.

GOVERNMENT PLANTATIONS, 1927.

In 1927 an alteration in the method of supervising the Government Plantations was made, and Mr. Graham Tomson was appointed manager with full responsibilities as to the management of the plantations subject to the general direction of the head of the department. This step was taken with the objects of economising in costs of production, and of carrying on systematic schemes of development. In addition to these duties the manager is required to co-operate in experimental work. In the first instance some degree of reorganisation was necessary to consolidate contiguous units of plantations into groups, forming estates. Each group was put in charge of a head overseer, responsible for all the work in that group under the direction of the manager. Thus the properties are grouped for administrative purposes into five estates in Zanzibar and three in Pemba.

Stock of Clove Trees and Coconut Palms.—The number of mature coconuts does not correspond with the number of bearing coconuts. On operated estates it has been found that the proportion of bearing trees is approximate 51 per cent of the total. Many of the clove trees produce but a small crop owing to poor growth and scanty foliage, and their effect is to reduce the average production per tree.

	CLOVE TREES.			COCONUT TREES.		
	Bearing.	Non bearing.	Proportion Non bearing to bearing.	Bearing.	Non bearing	Proportion Non bearing to bearing.
ZANZIBAR.						
Operated Estates ...	1,09,396	24,000	22:100	51,000	36,000	70:100
Leased Estates ...	1,725	...	...	1,22,000	75,000	61:100
Total ...	1,11,121	24,000	...	1,73,000	1,11,000	64:100
PEMBA.						
Operated Estates ...	14,006	2,940	21:100	8,700	1,000	11:100
Leased Estates ...	6,975	325	4:100	8,900	1,600	18:100
Total ...	20,981	3,265	15.5:100	17,600	2,600	14.8:100
Grand Total ...	1,32,102	27,265	20.6:100	1,90,600	1,13,600	21.6:100

It is evident that stock totals need careful revision, but this work cannot be attempted until the plantation surveys now in course of execution, are completed.

Management and Surveys.—The efficient and economic management and development of plantations is contingent upon accurate survey work and the preparation of working plans based thereon. In former years, certain surveys were made, but it was found necessary to have the work done again in a proper manner owing to the unsatisfactory state of the old plans. At the end of 1927 the position in regard to surveys was as follows:—

Boundary traverses completed:—Kisauni; Mpapa; Chuini group; Pangeni; Miwani; Chumbuni 1 and 2; coastal coconut belt from Marahubi to Kibweni, and the 50 acre plot at Mgongowangamia.

Work was proceeding on the Kizimbani estate with the object of preparing (a) a small scale plan of the entire estate; (b) plans on a larger scale showing the boundaries of the nine subdivisions, of which eight are contiguous and one outlying; (c) the further cutting up of the sub-divisions into blocks showing stands of cloves, coconuts, mixed crops, open spaces suitable or otherwise for planting, swamps, and undeveloped bush.

Acreage of properties which have been surveyed:—

MACHUI ESTATE.

Dunga	367
Koani	158
Marseilles	480
El-Hathara	260.60
Manyame	99.68
Basra	118.85
Kitumba	193.08
Darajani	193.30
Miwani	337.60
Kinaoni	648.02
Mpapa	552.50
	<hr/>
	3,408.63
	<hr/>

AGRICULTURE

MTONI ESTATE

Marahubi and Mtoni	470
Bet-el-Ras	200.05
Kibweni	101.80
Chumbuni No. 1	181.20
Chumbuni No. 2	108.70
Mgongowangamia	107
	<hr/>
	1,168.75
	<hr/>

SELEM ESTATE.

Selem	745.79
Pangeni	680.50
Chuini Division	1,061.70
	<hr/>
	2,487.99
	<hr/>

KIZIMBANI ESTATE.

3,146 acres

CHUKWANI ESTATE.

Chukwani	941.21
Mazizini	192
Kisaoni	388.20
	<hr/>
	1,521.41
	<hr/>

The total acreage surveyed to date is 10,986.99 acres.

Until the completion of these plans systematic management cannot be achieved and should not be expected; nor should any large schemes of development be embarked upon. Much land has been cleared and has reverted to bush in the past owing to the absence of carefully considered working plans based on accurate surveys, resulting in no return for the money spent.

REPORT ON THE GOVERNMENT CHEMICAL LABORATORY

FOR THE YEAR 1927.

Equipment.—The policy of building up a sound equipment of essential apparatus and chemicals has been continued, and the facilities of the laboratory have proved adequate to deal with all the problems submitted during the year.

On the abolition of the post of Mycologist the equipment of the mycological laboratory was taken over.

Staff.—The Assistant Government Chemist was on leave from the 28th August, and during his absence the work of the laboratory was undertaken by Mr. A. C. Barnes.

With Mr. J. E. Baker (Agricultural Officer) the Assistant Government Chemist represented the Zanzibar Government at the Imperial Agricultural Research Conference from 4th October to 3rd November. He served on three technical committees of the Conference—Soils, Preservation and Transport, and Agricultural Economics and Marketing. This matter is made the subject of a separate report.

Chemical Work.—The tables given below show that the laboratory has been of increasing use not only to the Agricultural Department but also to other Departments whose work calls at times for the services of the Chemist, and the notes appended provide some further statistics and illustrate the varied and interesting nature of the work.

A considerable increase in the number and variety of samples submitted followed the enactment of the Customs Management Decree, 1926, the Druggists Decree, 1927, and the Dangerous Drugs Decree, 1927.

In addition to the routine work reported below, investigations were continued on clove oil products, the results of which will be reported when complete. In the course of this work, calcium eugenate, hitherto undescribed, was prepared and studied.

The total number of samples received was 1,172, compared with 808 in 1926.

These samples were received from Departments of the Government as shown in Table I.

TABLE I.

Department.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.
Agriculture	250	105	50	419	824
Health	27	19	31	33	110
Police	18	19	9	12	58
Customs	30	36	29	82	177
Other Departments	—	2	1	—	3
Totals	325	181	120	546	1,172

TABLE II.

Details of samples, 1927, with 1926 figures for comparison			
<i>Agriculture.</i>	1927	1926	
Cloves	822	636	
Stems	2	—	
Other samples	—	7	
	824	643	
<i>Health.</i>			
Soda water	80	65	
Cattle Dips	11	2	
Water	7	4	
Toxicological specimens	5	—	
Other samples	7	9	
	110	80	
<i>Police.</i>			
Spirits and other alcoholic liquids	27	6	
Exhibits for Opium, Bhang, etc.	31	8	
Other samples	—	14	
	58	28	
<i>Customs.</i>			
Spirits, perfumes, etc.	79	10	
Medicines for opiates and dangerous drugs	58	30	
Condensed milk	35	8	
Other samples	5	2	
	177	50	
<i>Other Departments</i>	3	7	
	3	7	
Totals	1,172	808	

NOTES.

Agriculture.—Of the 822 samples of cloves, 139 were examined for foreign matter only, 37 for foreign matter and moisture, 644 for moisture only, and two for oil content.

Of the 176 samples examined for foreign matter, 70 were passed (5% or under), 101 contained from 5.1 to 10%, and 5 contained over 10% of foreign matter.

Of the 681 samples examined for moisture, 61 were passed (16% or under) and the remainder contained moisture above the limit as follows:—16.1—17%, 104; 17.1—18%, 168; 18.1—19%, 164; 19.1—20%, 97; 20.1—21%, 46; 21.1—22%, 21; over 22%, 20—the highest figure being 28.6%. The wet weather experienced towards the close of the year led to a great increase both in the total number of samples and in the proportion of very wet samples. Thus in the

first quarter of the year the number of samples found to contain over 18% of moisture was 21% of the total examined, in the second quarter 29%, in the third quarter 41%, and in the last quarter 67%.

The high degree of accuracy with which the Inspectors are able to judge the limiting moisture content by handling is reflected in the very small proportion of samples submitted for analysis which are found to contain 16% or less of moisture—less than 9% of the total.

Health.—Regular examination were made of soda water from all manufactories, with the view of detecting metallic contamination. A minute amount of copper is sometimes dissolved from parts of the machines, particularly when the coating of tin becomes worn, and it is necessary to see that this does not reach the point when it would become prejudicial to health.

Several tests were made of the fluids from the cattle dipping tanks at Mji Mpya and Pigaduri. The arsenical strength was in all cases sufficiently near to standard for practical purposes. Too strong a fluid might injure the skins of the animals, and too weak a dip would be ineffective in exterminating parasites.

Water samples examined were all from Pemba—Chake Chake (2), Funzi Island (1) and Mkoani (4). The results of chemical examinations are correlated with those of bacteriological examinations made in the Health Department Laboratory in forming opinions on public water supplies.

Toxicological exhibits included a sample of Sulphuric Acid (found 74%) which had caused death, and a specimen of urine from the victim. In the vomit of a patient suspected of having taken A.B.C. liniment aconitine was detected.

Other specimens submitted by the Health Department included two of brandy, two of condensed milk, a skin lotion (found to be oil of wintergreen), sulphuric acid (used in preparing the gas in a mineral water factory), pills and poppy capsules.

Police.—The alcoholic liquids included spirits, perfumes and native liquors. Three specimens were identified as diluted methylated spirit: one of these had been sweetened with 14% of sugar. Three samples suspected of being "Pombe", a liquor produced by the fermentation of millet and other grains or fruits were found to be non-alcoholic; they were in the first stage of preparation when the liquid is known as "Togwa".

Thirteen specimens of opium were identified, and opium was detected also on a pair of scales, a garment and a pipe. Nine exhibits proved to be bhang. In addition, bhang was detected in admixture with tobacco in one case and with nutmeg flour in another. Two exhibits believed to be cocaine proved not to be that drug.

Customs.—A large number of spirits, liqueurs, perfumes, hair lotions and essences (including those used in considerable quantities

for colouring and flavouring mineral waters) was examined to enable duty to be assessed on alcoholic content.

Numerous medicines (particularly of Indian and Chinese origin) were examined for opium and other dangerous drugs, but only in one case were poisonous alkaloids found. Opinion was given on many imported medicines as to whether they should be classed as "proprietary" or not.

The lower limit for fat in condensed milk has been fixed at 8%. This is necessary in the interests of the public in view of the fact that the majority of purchasers of this commodity in Zanzibar cannot read the instructions (in English) and are therefore likely to dilute all varieties in the same way. That analytical control is essential is shown by the fact that out of the 30 samples of which the fat content was determined only 16 contained 8% or over of fat (the highest figure being 9.8%), two samples contained less than 1%, three between 1% and 4%, four between 4% and 6%, and five between 6% and 8%.

Other samples examined for the Customs Department included one of clove sweepings (cleaned) which contained 15% of oil, two of non-arsenical fly killing liquids, and one of an arsenical rat poison.

For the *Port and Marine Department* two thermometers were tested, and a sample of crude oil was submitted by the *Public Works Department* for examination as to its suitability for use as a flux in making road surfacing material.

In all 165 written reports were sent out during the year to Departments other than the Agricultural. The acceptance of reports signed by the Government Chemist or the Assistant Government Chemist as evidence in legal proceedings in the local courts has rendered the attendance of the staff as witnesses unnecessary during the period under review.

L. W. RAYMOND.

Assistant Government Chemist.

25th February, 1928.

APPENDIX.

TABLE I.

ASSISTANCE TO CLOVE GROWERS.

(a) 1927 Loans for harvesting, free of interest.

	Loans	Rs.
Zanzibar	... 222	41,001
Pemba	... 356	39,823
Total	578	80,824
Weti	... 218	30,560
Chake Chake	... 102	6,278
Mkoani	... 36	2,985
Total	356	39,823

STATEMENT OF BONUS PAYMENTS, 1927.

	Zanzibar.	Pemba.	Total.
	Rs.	Rs.	Rs.
On bearing trees	... 1,60,481	2,95,475	4,55,956
On young trees	... 13,114	33,545	46,659
	1,73,595	3,29,020	5,02,615

(b) Free Storage, 1927.

Sixty-six persons made use of the free storage facilities provided, and 18,467 fraslās of cloves were deposited under this scheme. Loans amounting to Rs. 45,760 were granted on the security of 9,143 fraslās of cloves to 40 of the individuals who stored cloves.

TABLE II.

Protectorate Clove Crops, 1922-1927 (in thousands).

Season.	Zanzibar	Pemba	Total
	Frs.	Frs.	Frs.
1922/23	291	691	982
1923/24	75	237	312
1924/25	241	520	761
1925/26	219	393	612
1926/27	204	529	733
Average for 5 years	206	474	680

Note.—Season 1st July to 30th June
1 fraslā = 35 lbs. avoird.

TABLE III.

Comparative prices of cloves and stems in London and Zanzibar (pence per lb.) 1927.

Month.	London.				Zanzibar.	
	Petang.	Amboyna.	Madagascar.	Zanzibar.	Stems.	Cloves.
January	25.00	16.50	10.75	9.25	4.00	5.75
February	25.00	16.00	10.75	9.12	4.00	5.75
March	25.00	15.50	10.75	8.75	4.00	6.00
April	23.00	15.50	10.25	8.75	4.00	6.00
May	23.00	15.50	10.25	8.75	4.00	6.00
June	23.00	15.50	10.25	8.62	4.00	6.00
July	23.00	15.50	10.25	8.25	4.00	5.75
August	22.00	13.50	9.25	7.87	3.50	5.75
September	21.00	12.50	8.62	7.87	2.75	5.75
October	21.00	12.50	8.62	7.50	2.75	5.00
November	21.00	12.50	8.75	7.25	2.75	5.00
December	21.00	12.50	8.75	7.37	2.75	5.00

TABLE IV.

Export of Domestic Copra for 1923-1927 and mean local price per frasila.

Year.	Fraslas (thousands)	Price	
		Rs.	Cts.
1923	601	4	82
1924	654	4	85
1925	799	4	49
1926	823	4	34
1927	643	4	23
Average for 5 years		704	

TABLE V.

GOVERNMENT PLANTATIONS.

Survey of clove harvest returns 1927/28.

Shamba.	Bearing trees.	Green Cloves.		Dry Cloves.		% loss between green and dry.	Dry Stems lbs.
		lbs. Picked.	Amount spent. Rs. cts.	lbs. Pro duced.	lbs. per tree.		
ZANZIBAR.							
Marseilles ..	18,951	149,293	2,955 06	49,353	2.60	67	9,592
Basra ..	5,828	55,846	1,100 29	15,075	2.59	73	3,824
Kinaoni ..	3,024	31,508	620 70	9,477	3.13	70	2,269
Kitumba ..	1,105	15,677	317 50	5,254	4.75	66	2,205
Koani ..	3,074	9,438	182 03	3,142	1.02	67	711
Dunga ..	3,053	124,807	2,464 99	38,900	12.74	69	9,419
Kizimbanis ..	8,295	148,830	2,901 07	45,696	5.51	69	10,021
Mlangos ..	11,047	131,043	2,616 69	39,476	3.57	70	7,989
Kipange ..	4,596	55,970	1,110 72	16,924	3.68	70	2,844
Kinuni Moshi ..	1,556	11,481	217 15	3,830	2.46	67	1,138
Bumbwi Sudi ..	2,939	26,136	503 77	7,905	2.69	70	1,525
Selem ..	12,889	217,658	5,296 92	88,077	6.83	68	19,715
Mahonda ..	5,716	85,556	1,667 75	27,052	4.73	68	7,336
Mbaleni Kubwa ...	5,721	112,179	2,281 22	33,833	5.91	70	7,255
Mbaleni Ndogo ..	2,305	39,469	773 92	12,473	5.41	68	2,760
Kitope ..	6,695	55,179	1,091 45	16,636	2.47	70	3,792
Mkanyageni ..	7,621	123,328	2,458 75	39,221	5.15	68	8,648
Kidichi and Mdo ..	3,262	44,753	871 98	13,986	4.29	69	2,702
Mgongowangamia..	1,724	28,247	534 73	8,982	5.21	68	1,444
Total ..	109,401	15,26,406	29,966 69	475,293	4.34	69	105,189
PEMBA.							
Fufuni ..	7,711	161,777	3,159 85	50,351	6.60	69	11,768
Tundaa ..	4,113	7,619	148 83	2,456	0.60	68	442
Mkondeni ..	2,476	6,088	118 94	1,759	0.71	71	359
Total ..	14,300	175,484	3,427 62	55,066	3.85	69	12,569

TABLE VI.
Expenditure and Revenue, 1927.

EXPENDITURE.		REVENUE.	
Administration.		Government Plantations.	
	Rs.		Rs.
Personal Emoluments	1,09,186	Personal Emoluments	44,852
Clothing	530	Boundary Marks and Survey accessories	994
Incidental Expenses	619	Clothing	43
Passages	8,621	Incidental Expenses	296
Purchase of Seeds	293	Labour for Clove picking and drying	46,484
Purchase of Materials and Tools	3,231	Labour for coconut gathering	8,506
Travelling Expenses and Transport	3,309	Labour for cultivation of Plantations	84,660
Electric Supply	373	Maintenance of plantation Houses	2,040
Labour for Gardens and Open spaces	9,421	Passages	592
Consolidated Travelling Allowances	3,359	Purchase of Seeds	747
Maintenance of Motor Vehicles and Bicycles	2,502	Purchase of Material and Tools	5,736
Five Bicycles	700	Rations and Equipment for Harvest labour	100
		Travelling Expenses and Transport	8,796
		Maintenance of Copra Factories	9,173
CHEMICAL BRANCH.		Consolidated Travelling Allowances	900
Personal Emoluments	11,507	Labour for Development of Plantations	32,913
Upkeep of Laboratory	1,541	Maintenance of Plantation Pupils	1,457
Passages	2,150	Manures	1,323
Travelling Expenses and Transport	478	Copra Factory at Mtoni	2,981
		Fordson Tractor and Oliver Harrow	2,573
Total Rs.	1,57,820	Total Rs.	2,55,106
		Total Rs.	4,07,010

TABLE VII.

Meteorological observations, 1927:—

Month.	Temperature.						Rainfall.											
	Zanzibar Town.				Pemba, Banani.		Zanzibar.						Pemba.					
	Means of		Absolute		Means of		Absolute		Town.	Solemn.	Kidiehi.	Koani.	Mko-Koloni.	Chwaka.	Wedi.	Banani.	Mkoni.	Funjini.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.										
January	87.8	80.2	90.2	77.7	89.2	79.9	91.5	78.5	0.13	0.06	0.14	1.10	0.19	0.41	0.06	0.21	0.15	0.53
February	89.8	81.3	94.0	76.4	91.3	80.3	95.0	79.0	1.43	0.78	0.11	0.03	0.09	0.67	0.00	0.00	0.00	0.00
March	86.2	78.1	91.3	71.8	89.3	79.4	95.0	74.0	11.36	7.98	14.21	7.30	10.99	10.41	15.35	8.22	6.15	8.15
April	86.3	78.5	90.0	75.7	87.3	79.6	92.0	76.0	10.58	10.08	14.01	9.58	9.46	8.86	8.01	9.07	4.35	4.90
May	83.9	75.9	87.2	73.8	85.9	76.7	82.0	71.0	10.13	11.01	19.56	11.29	9.57	7.11	20.08	14.94	14.93	15.42
June	82.5	74.4	84.7	72.4	83.4	76.5	87.0	71.0	0.48	0.39	0.67	0.55	0.37	1.79	1.64	3.58	4.01	2.94
July	80.7	72.6	82.3	69.5	81.3	73.4	85.0	71.0	0.91	1.29	4.37	1.53	0.62	2.12	4.27	3.53	5.29	4.36
August	81.5	72.9	83.3	71.0	83.2	73.5	85.9	71.0	1.09	4.03	3.30	3.75	3.27	0.97	0.98	0.61	0.55	0.31
September	83.6	73.5	85.8	71.4	84.4	74.6	87.0	73.0	3.48	3.40	5.12	2.17	4.23	0.31	0.77	0.85	0.61	0.69
October	83.0	74.7	85.0	73.0	81.7	76.0	86.5	74.0	10.68	6.81	10.85	8.41	4.42	8.02	11.90	8.13	11.11	8.42
November	84.8	77.2	87.2	74.8	86.5	77.2	89.0	75.0	7.73	9.48	8.83	11.13	3.45	5.49	7.60	8.91	6.45	9.49
December	85.0	78.4	88.0	72.0	87.3	78.9	89.5	75.0	12.50	9.73	17.08	10.64	8.86	3.82	11.70	8.32	12.70	9.83
For the year	84.6	76.4	94.0	69.5	86.1	77.1	95.0	71.0	79.53	65.10	98.25	67.45	55.52	50.01	82.36	66.17	63.48	64.01

Zanzibar Protectorate.

REPORT ON THE PUBLIC WORKS DEPARTMENT FOR THE YEAR 1927.

1. *Summary of Expenditure.*—The total expenditure of the Department during the period under review was as follows:—

	Amount authorised.		Amount spent.	
	Rs.	£.	Rs.	£.
Personal Emoluments ...	4,11,485	30,861	4,03,750	30,281
Other Charges ...	45,767	3,432	56,004	4,200
Special Expenditure ...	66,892	5,017	54,928	4,120
Public Works Recurrent ...	4,26,452	31,983	4,04,940	30,371
Public Works Extraordinary	16,85,466	126,410	6,70,240	50,268
Total ...	26,36,062	197,703	15,89,862	119,240
Special Expenditure:—				
Harbour Works ...	6,66,666	50,000	4,96,684	37,251
Road Construction, Pemba	2,66,667	20,000	3,84,817	28,861
Zanzibar	4,00,000	30,000	3,23,645	24,274
New Road (Gulioni-Darajani)	66,667	5,000	1,83,745	13,781
Work done for other Depts.	—	—	35,433	2,657
Work done for the Public...	—	—	21,284	1,596
Total ...	40,36,062	302,703	30,35,470	227,660

For the purpose of comparison the statement of expenditure during the past five years is tabulated:—

	Rs.	£.
1923	24,06,510	160,433
1924	22,60,751	150,717
1925	30,28,930	201,928
1926	39,07,980	260,532
1927	30,35,470	227,660

Two engineering divisions were maintained, and the following statement shows the expenditure incurred by the officers in charge:—

	Rs.	£.
Pemba	4,93,074	36,980
Zanzibar	25,42,400	190,680

The gross expenditure of the Department for 1927 shows a decrease of £32,871 over the expenditure in 1926.

2. *Maintenance of Buildings.*—The amount available for the maintenance of buildings in 1927 was £5,000.

The amount actually expended was £4,988 as detailed below:—

	Number repaired.	Amount	
		Rs.	Cts.
Zanzibar	112	42,084	98
Mkokotoni	8	2,387	03
Mangapwani	4	1,839	08
Chwaka	6	2,525	24
Quarantine Station	1	2,283	00
Mwera	3	706	94
Other Outstations	13	2,306	00
Pemba.			
Weti		3,826	11
Chake Chake		5,816	45
Mkoani		2,737	44
Total		Rs. 66,512	27

The estimated value of Government-owned buildings is approximately £459,873, a summary of these buildings is as follows:—

Zanzibar.	Rs.
Public Buildings—including the Residency, Sultan's Palace, public offices, godowns, etc. ...	30,03,395
Dwelling houses—the property of the Government ...	12,69,650
Government buildings—outside the town limits, including agricultural buildings ...	3,97,218
Dwelling houses—leased by private individuals, for maintenance of which Government is responsible ...	2,59,560
Total	Rs. 49,29,823
Pemba.	
Public Offices—hospitals, godowns and houses owned by Government ...	5,22,666
Dwelling houses owned by Government ...	6,79,150
Total (Zanzibar and Pemba)	Rs. 61,31,639

The approximate value of dwelling houses leased by Government for the maintenance of which Government is responsible:—

Zanzibar	... 4,40,485
Pemba	... 13,334
Total	Rs. 4,53,819

3. *Buildings*.—The following buildings have been erected during 1927:—

	£.
Structural alterations and repairs to Government Offices, Zanzibar ...	3,272
Additions to Native and Subordinate's Hospital, Zanzibar ...	3,171
Clerks Quarters, Pemba ...	1,670
Additions to Health Office, Zanzibar ...	1,310
Buildings at Leper Settlement, Funzi Island ...	1,120
District School, Kizimkazi, Zanzibar ...	492
Smoke Latrine, Ziواني Police Lines ...	481
Conversion of Premises for New Customs Offices, Zanzibar ...	174

£11,690

	£
Structural Alterations and Repairs to Govt. Offices, Zanzibar	3,272

This work was commenced during August. The alteration consisted of removing the existing decrepit galvanized iron roof and constructing a re-inforced concrete flat roof with a pre-cast concrete decorative balustrade. The telephone exchange and sun printing room have been re-instated on the roof in a new building of light asbestos construction. During the progress of the work it was found necessary to reconstruct the roof over the central wall which was in a dangerous condition, and to erect steel truss frames to stiffen the teak beams and to support the new roof. Much expense was incurred and the work much impeded by abnormally heavy and unseasonable rains.

Additions to Native and Subordinates Hospital, Zanzibar ...	3,171
---	-------

The additions consisted of a new operating theatre with anæsthetic room and annexes, a new X-ray room and additions to convert an existing building into a properly organized dispensary and an out-patient department.

The construction of the operating theatre and X-ray block is in coral masonry in cement with re-inforced concrete and Marseilles tile roof. Special hospital equipment and plate glass windows were installed. Work was commenced on the operating theatre block on January 16th and completed on July 20th. Work was commenced on the out-patients block on 21st June and completed on 11th November, much delay was caused by abnormal rain.

	£.
Clerks Quarters, Pemba ...	1,670

Two blocks each of two quarters were commenced at Mkoani during August.

The construction is of coral masonry walls in cement mortar, with a Marseilles tile roof, concrete floor and teak joinery.

Additions to Health Office, Zanzibar ...	1,310
--	-------

The additions consisted of a Biological laboratory and office, a vaccination room, mosquito inspectors room and an additional stair. Construction was similar to that of the existing building.

Work was commenced on 11th August and completed on 31st December. Much delay was caused by abnormal rains.

Buildings at Leper Settlement, Funzi Island ...	1,120
---	-------

The house erected is of semi permanent construction with native 'tomeo' walls and asbestos roof. The design is similar to that of the rest houses erected in Zanzibar and Pemba in 1927. The expenditure included a large central tank for the settlement and a pump.

District School, Kizimkazi, Zanzibar ...	492
--	-----

This building was the first erected of the type design and contains two class rooms 25 feet by 16½ feet with a roofed assembly space of similar dimensions in between. An additional class room can be formed when required by walling in the sides of the assembly space.

The construction consisted of an asbestos roof supported on re-inforced concrete posts with sides of painted G. I. sheets with expanded metal above to admit light and air. The construction is arranged in unit parts for making in workshop and assembling on the site. The building was erected by contract, commenced in March and completed in May.

Smoke Latrine, Ziواني Police Lines ...	481
--	-----

Of similar construction to others previously built in the lines. The expenditure included the conversion of an old pit latrine, adjoining the ablution room.

Conversion of Premises for New Customs Offices ...	174
--	-----

The work of converting the old building, formerly used as Harbour Works Offices and Resident Engineer's Quarters, into new Customs Offices was commenced late in the year. The ground and first floor will be used for Customs Offices and the second floor retained as European Quarters.

4. *Buildings erected as Minor Works:—*

ZANZIBAR.	Expenditure	
	Rs.	Cts.
Alterations to Law Courts at Zanzibar	... 1,026	05
Latrine and lavatory on upper floor of main building at Native Hospital	... 1,216	95
District Court at Chaani	... 1,678	90
Reconstruction of tar macadam mixing shed at Refuse Destructor	... 2,580	91
C. I. shed at Recreation Park	... 346	66
PEMBA.		
	Rs.	Cts.
Police Station at Tumbe	... 1,901	58
Market at Kengeja	... 1,343	89
Garage for D.C.'s house, Weti	... 273	99
House for motor boat driver	... 200	42
Total Rs.		10,569 35

5. *Miscellaneous Minor Works.*—The expenditure under this vote during 1927 was Rs. 24,370-87.

6. *Maintenance of Telephones in Pemba.*—This service was maintained at a cost of Rs. 2,211. The total mileage of telephone lines throughout the island is $161\frac{3}{4}$ miles, with 5 exchanges and 66 instruments.

7. *Maintenance of Roads and Bridges.*—The total mileage of metalled roads in the Protectorate is now 151.58 miles, made up as follows:—

Zanzibar outside Town Boundary	103.44 miles
Zanzibar Town Roads	21.00 miles
Pemba Roads	27.14 miles

On this mileage the sum of Rs. 1,89,062 was spent on repairs during the year. These consisted mainly in reconstructing worn out portions of considerable lengths, water proofing existing good surfaces with Colas, Spramex, Trinidad Bitumen or other similar materials, and of course the usual patching of pot holes and the clearing of side drains

A table is given below showing mileage and distribution of expenditure:—

ZANZIBAR.	Mileage.	1925	1926	1927
		Rs.	Rs.	Rs.
Mkokotoni Road ...	20.59	40,762	66,277	53,096
Mkokotoni-Mkwajuni ...	4.00	...	...	...
Mahonda-Mkwajuni ...	9.00	...	...	5,335
Mfenesini-Bumbwini ...	7.00	...	...	...
Mangapwani ...	0.75	...	...	...
Tunguu Road ...	8.88	3,692	11,089	25,610
Chwaka Road ...	18.34	39,842	34,648	32,933
Fumba Road ...	12.75	10,286	4,800	9,921
Chukwani Road ...	3.50	2,180	999	2,658
Kidimni-Ndagaa Road ...	5.73	...	...	879
Kianga-Mdo Road ...	6.00	...	...	...
Dunga-Uzini ...	1.90	...	...	337
Dunga-Tunguu ...	2.00	...	...	237
Tunguu-Unguja Kuu ...	3.00	...	...	...
Zanzibar Town Roads ...	21.0	46,059	19,582	33,794
Maintenance of Bridges ...	...	7,124	4,576	4,277
PEMBA.				
Mkoani-Kengeja Road ...	10.40	} 3,581	7,256	19,985
Chake-Mzambaraoni Road ...	5.55			
Mzambaraoni-Weti Road ...	4.69			
Chake-Wesha Road ...	4.00			
Weti-Matangatwani Road ...	2.50	}		
Total ...	151.58	1,53,526	1,49,027	1,89,062

WATER.

8. *Water Revenue.*—Receipts from water rate amounted to Rs. 2,640 and from sale of water for trade purposes and to shipping Rs. 31,384-86, the quantity of water supplied to the latter being 5,086 tons. The total quantity of water supplied is 5,500 tons, which includes, besides the above, water supplied to Government steamers, Prison Island and other Government requirements, for which no charge is made.

The receipts from Dhobi Station amounted to Rs. 3,364. The total revenue was Rs. 37,388-86.

9. *Water Supply.—Maintenance.*—The supplies at Zanzibar, Chake Chake and Weti have been maintained. Water is supplied to Zanzibar by gravitation from the springs Bububu and Chem-Chem. Weti and Chake Chake, in the Island of Pemba, are supplied by pumping. The total cost of maintenance was Rs. 9,137.

The sum of Rs. 1,095 was expended in periodical clearing of the fenced area surrounding Bububu and Chem-Chem Springs, and general repairs to mains, services and pumps to Government houses.

10. *New Works.—Extensions to Main.*—The sum of Rs. 1,473 was expended in extension and the following new water mains were laid: 300 lineal feet of 6-inch pipe, 1,277 of 4-inch and 426 of 1-inch service pipe. Eight new connection were made in Zanzibar during the year, the total service connections now being 444.

The sum of Rs. 9,758 was expended in prevention of pollution of the Bububu Springs, and 350 lineal feet of grooved and tongued oregon pine timber piling was driven.

ANTI-MALARIAL DRAINAGE.

11. ZANZIBAR.—No funds having been allowed this year for Zanzibar and no maintenance being required sanction was obtained to utilize money allocated to "Maintenance of Swamps Drainage" for the construction of new work. The total expenditure was Rs. 1,857 and the work consisted chiefly of the completion of the main drainage schemes undertaken last year as enumerated below:—

(1) To drain the rising ground at Kiungani between Kilimani and the sea various small catchment areas were partially filled, graded and drained into the main Ziواني drain by four agricultural drains and two earth drains, the total length of drain constructed being 800 feet.

(2) At Migombani, to drain the hill side below the road and bounded by the Agricultural gardens, a concrete channel with an agricultural drain extension was constructed draining the area into the concrete channel constructed last year. The total length of each was 300 linear feet and 175 linear feet respectively.

PEMBA.—Practically all anti-malarial work with regard to swamp drainage was carried out at Chake Chake.

On the accepted principal of attacking the water table before it reaches the surface, open channel drains of saucer section were laid in the swamp below the European residential part of the town in 1926, but the time was insufficient to allow of the drains being laid to their fully required lengths. It was agreed that the programme for 1927 should consist of the completion of the 1926 work and this work was accordingly carried out at a cost of Rs. 3,692 and has proved to be entirely satisfactory.

Road Construction, Zanzibar.

(1) *General*.—Work, during the year under review was carried out in the following sections:—

Section 11. Mfenesini-Mangapwani-Bumbwini (7.75 miles).

Section 12. Kidimni-Ndagaa Extension (.53 miles).

Section 14. Kianga-Mdo (4.20 miles).

Section 15. Tunguu-Unguja Ukuu (10.01 miles).

Section 16. Mdo-Chuini (3.40 miles).

Gulioni-Darajani Road (.78 miles).

Progress, in spite of the “*masika*”, was good, the first and third sections mentioned above being completed by October. Considerable savings were effected thus enabling work to be started on Sections 15 and 16.

The November rains however were exceptionally heavy, contributing approximately half of the annual rainfall, consequently progress was badly retarded during the last two months of the year.

Labour was plentiful with a slight decrease during the clove harvest. It is recruited chiefly from mainland tribes temporarily settled in Zanzibar.

(2) Section 11. Mfenesini-Mangapwani-Bumbwini (7.75 miles).

At the time of submission of the last annual report a commencement had been made and 46 chains of earthwork completed.

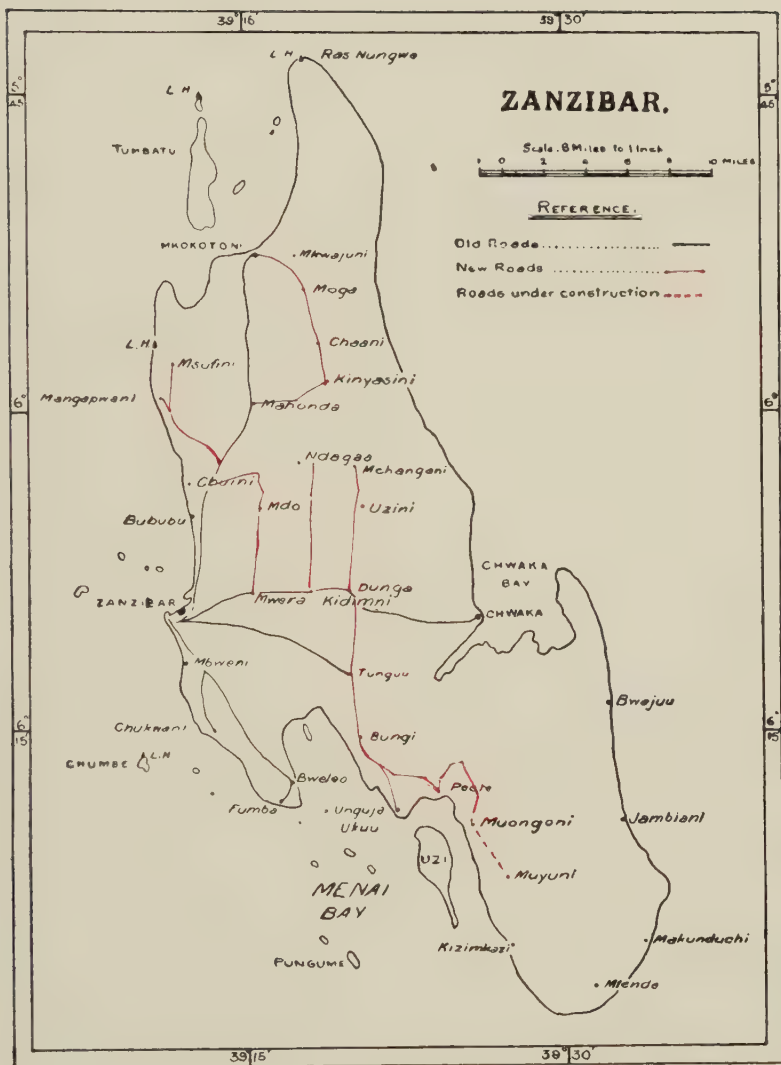
Quarries were opened up at intervals along the road, at approximately chainages 52, 120, 190, 220 and for the last $1\frac{1}{2}$ miles stone was quarried alongside in the “*wanda*”. The Acme stone breakers driven by Blackstone Oil Engine were used for breaking metal and were moved from quarries at chainages 52 to 190 and to the “*wanda*” at chainage 220.

A great saving in time and cost was effected, metal being broken at approximately half the cost of hand-broken stone.

The total quantity of stone and metal used was:—

Foundation	441,964 cubic feet
Metal	176,960 „ „
Blinding	31,787 „ „

Stone and metal were transported by 10 Morris one-ton lorries supplemented at intervals by a two-ton Daimler and trailer and a few locally engaged animal carts.



Road rolling was carried out by a six-ton steam roller, two light motor rollers and one 12-ton crude oil roller, a new production by Aveling and Porter. This roller gave exceptionally good service, working continuously 12 hours per day in two shifts of 6 hours each.

The only necessary bridge, a 17 feet 6 inches span reinforced concrete structure, was constructed at Mto Maji Mekundu and finished in April at a cost of Rs. 8,700 or £653.

The road was officially opened by His Highness the Sultan on October 26th and by the end of the year six miles of road had been Colas treated and tarred, which should reduce wear and maintenance to a minimum.

The total construction expenditure was Rs. 1,43,664 or £10,779, this being at a rate of £1,403 per mile, as against the estimated figure of £2,441 per mile.

(3) Section 12. Kidimni-Ndagaa Extension (.53 miles).

The Kidimni-Ndagaa Road, constructed in 1925 and 1926 was this year extended by half mile.

Work was commenced in July and the road was completed in October at a cost of Rs. 8,291. This works out at £1,219 per mile as against the estimate of £1,523 per mile.

The stone used was transported by Morris and Ford lorries from the old quarry $1\frac{1}{2}$ miles back along the road the quantity used was:—

Foundation	21,325 cubic feet
Metal	8,437 $\frac{1}{2}$ „ „

(4) Section 14. Kianga-Mdo Road (4.20 miles).

Preliminary work was commenced in May of last year and road construction proper in November.

The two temporary crossings over the Kianga river were replaced by two twin concrete culverts arches of 8-feet span and finished in March at a cost of Rs. 13,496 or £506 each.

No stone, suitable for road work, was available in the vicinity, consequently it was transported from the “wanda” at mile $9\frac{1}{2}$ Chwaka Road. This gave a length of haul of $3\frac{1}{2}$ miles increasing to $7\frac{1}{2}$ miles as construction proceeded. Transport was effected by 6 Morris and Ford lorries supplemented by contractor's lorries. Metal for the last mile was machine broken—a stonebreaker similar to that used on section 11 being installed temporarily at Kidimni.

All rolling was done by one 6-ton steam roller which gave little trouble throughout.

The total quantity of stone transported and used was:—

Foundation	203,442 cubic feet
Metal	128,282 „ „
Blinding	61,396 „ „

The total construction expenditure was Rs. 1,11,763 which works out at £1,767 per mile, compared with the estimate of £2,684 per mile. The road was completed and opened to traffic during August.

(5) Section 15. Tunguu-Unguja Ukuu Road (10.01 miles).

This year's programme having been completed before the end of the year, with a distinct saving, it was decided to construct a third class road, metalled where necessary and earth where ground conditions were suitable, from Tunguu southwards to Unguja Ukuu.

The road runs approximately half through cultivated country and half through the "*wanda*" and follows the line of the existing track through Bungi avenue to Unguja Ukuu.

This line was straightened out in places to avoid cutting trees, and construction commenced in October, one unit commencing at Tunguu and a second unit at Bungi, approximately half way. When constructed eight miles will be metalled road and the last two miles an earth road.

Weather conditions during the last three months of the year were bad, as mentioned previously, but by the end of December 71 chains of road were completed, 155 chains metalled and 281 chains of foundation rolled.

This section should be finished early in 1928.

(6) Section 16. Mdo-Chuini Road (3.40 miles).

Survey and alignment were carried out in September and construction commenced from the Mdo end in October on completion of section 12 and from the Chuini end in November on the completion of section 11.

Quarrying was started at Kidimni, but owing to the excessive haul, a minimum of $7\frac{1}{2}$ miles, it was discontinued in favour of Chuini quarry, with a maximum haul of four miles.

A stonebreaker and portable oil engine were moved to this quarry for the breaking of metal and by the end of December had broken 54,000 cubic feet.

In spite of adverse weather conditions, as previously mentioned, the road was completed as an earth road with all permanent concrete culverts, by the end of the year. Transport of stone was however completely suspended, as the road became quite impassable.

It should be completed as a metalled road by the end of April 1928.

ESTIMATE.

(A) Construction Expenditure.	Total.
(a) Clearing @ 10/-	1,790
(b) Earthwork @ 90/-	16,110
(c) Metalling @ 270/-	48,330
(d) Bridges nil	—
(e) Culverts @ 15/-	2,685
	<hr/> 68,915

(13) Compensation.

Allow for huts	200
	<hr/>
	69,115

Construction rate per chain = 385/-

Construction rate per mile = 20,329/-

= £1,525/-

(Exclusive of overhead charges).

(7) Gulioni-Darajani Road (.78 miles).

The above road is built on the embankment and bridge over the creek, constructed under the Harbour Works supervision.

Construction commenced in November of last year, as mentioned in the last annual report and proceeded very satisfactorily until April, by which time half-mile of road was completed and work was closed down pending completion of the bank and the bridge.

Stone and metal were transported from Mbweni and Sheriff Mousa quarries by means of 3 Daimlers and trailiers, 2 Daimlers and 7 one-ton Morris and Ford lorries, while loading hoppers were erected at each of these quarries to facilitate and expedite the delivery and thereby reduce the cost of metal. This arrangement was most efficient and much time and money was saved.

From April until August no work was undertaken except that of casting coping, kerbs, and channel blocks, which continued until the required number was completed. Construction commenced in August and the road was completed and opened to traffic in October.

The road has now been surfaced in 500 feet lengths with five different water proofing materials, Tar, Colas, Coldfix, Trinidad Asphalt and Tarpad, all of which will be carefully watched as to their wearing properties.

The 30 feet wide road with its 10 feet footpath and concrete coping and kerbs is a workmanlike job and an excellent finish has been given to every detail.

The construction cost was Rs. 88,014 which works out at £8,256 per mile.

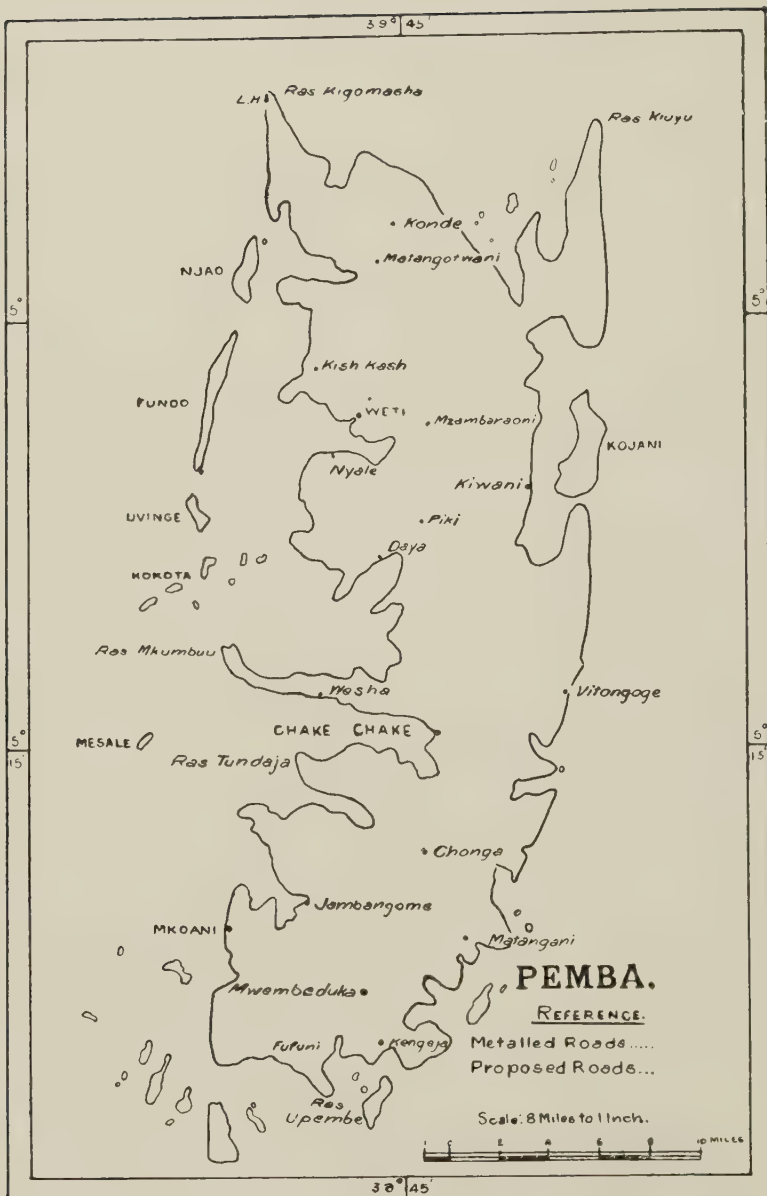
2. *Financial Summary.*—The total funds allowed and total expenditure incurred in 1927 only are shown below:—

(A) Funds available.	Rs.	Rs.	Cts.
(1) 1927 Estimates	4,00,000		
(2) Balance revoted from 1926	33,923		
(B) Expenditure.			
Overhead Charges @ 13.56 per cent		38,946	25
(C) Construction Expenditure.			
Miscellaneous Compensations left over from 1926		260	00
Section 11. Mfenesini-Mangapwani Road		1,52,154	39
Section 12. Kidimni-Ndagaa Road		8,277	47
Section 14. Mwera-Mdo Road		97,294	95
Section 15. Tunguu-Unguja Ukuu Road		12,947	57
Section 16. Mdo-Chuinir Road		13,764	37
		<hr/>	
		3,23,645	00
(D) Balance December 31st 1927		1,10,278	00
		<hr/>	
	Rs. 4,33,923	4,33,923	00
		<hr/>	

The above statement requires no elucidation, but it is to be noted that the overhead expenditure is 13.56 per cent of the total expenditure. This shows a slight increase on last year's figure and is due to:—

(1) An expenditure of Rs. 17,211 for 6 Morris one-ton lorries charged to this heading.

(2) Reduction of construction costs due to increased efficiency and reduction of daily rate for labourers to 10 annas.



Survey Dept. AM. O. Zanzibar.

Road Construction, Pemba.

(1) *General*.—Work was carried out on the following sections:—

Section 10.	Chake-Weti Road	20.5 miles
„ 11.	Weti Matangatwani Road	7.5 „
„ 12.	Mkoani-Mwembeduka Road	6.42 „
„ 13.	Mwembeduka-Kengeja Road	3.98 „
„ 15.	Limbani-Mzambaraoni-Mtemani Road	4.68 „
„ 16.	Kengeja-Kimbini Road	1.17 „
„ 20.	Chake-Mwembeduka (Northern)	
„ 21.	Mwembeduka-Chake (Southern)	

At the time of submission of the last annual report work was in progress on the first five sections.

Good progress was made during the first three months of the year and from July until October. Rain hampered construction considerably during the other months.

Labour, recruited chiefly from the mainland, was plentiful for the first 6 months, but decreased slightly in the latter half of the year owing to the clove harvest and bad weather.

Savings were effected on the original estimates and consequently additional work was undertaken on sections 16, 20 and 21.

(2) Section 10. Chake-Weti Road (Kisiwani) 20.5 miles.

Work on this section was confined to improvements in drainage, and metalling of bad places, which became impassable during the rains.

Culverts were inserted at three points on the road, and at mile 5 $\frac{3}{4}$ and 9, six chains and eight chains of metal were laid respectively.

In August the re-grading and metalling of Piki Hill was commenced, where $\frac{1}{2}$ mile of road was metalled and treated with Colas. Work was completed in November, in spite of adverse weather for the last two months.

A survey and alignment was made to bypass the narrow road into Chake Chake through Chachani for a distance of 7.5 chains only. This work will be done in 1928.

The total length of metalled road on this section is now 9.25 miles, leaving 11.25 miles of passable earth road.

(3) Section 11. Weti-Mtangatwani Road, 7.5 miles.

Work on this section was confined to the improvements enumerated below, most of which were undertaken and completed in the first half of the year.

(1) The widening out, re-grading and improvements to the alignment of the old route on Kwale Gongo Hill, for a distance of 30 chains. As an experiment 150 feet of road, known as Bungala Hill was laid with 18-inch square concrete slabs set at 4 feet 6 inches

centre in the clay sub-soil. Although a somewhat expensive form of construction it rendered this section of the road passable during the rains.

(2) One 18-inch diameter Armco-Culvert was inserted at Tondoni.

(3) Experimental sand clay treatment between Taif Hill and Kisiwani for a distance of 43 chains. This, at present gives every indication of being the satisfactory solution for a road with a loose sandy sub-soil in a district where stone is either not available or too inaccessible to transport to the road side.

(4) Section 12. Mkoani-Mwembeduka Road (6.42 miles).

With the exception of a small amount of work to the culverts this road was completely metalled by the end of February.

The road being mainly in side cutting numerous culverts were necessary, 83—18 inches diameter Armco, with headwalls on the upstream end being installed. In eight of the heaviest fillings special 135° bends and extensions were fitted to prevent erosion to the banks. This work was completed in June and July.

(5) Section 13. Mwembeduka-Kengeja Road (3.98 miles).

The major earthwork was completed last year, consequently a small amount of re-grading and widening only was required. 27—18 inches diameter Armco culverts were inserted replacing the temporary timber ones built last year.

In February two metalling units commenced at both extremities, and by the end of July the section was completely metalled.

Quarries were opened at Mtambili, Mwembeduka end Mwambe Kengeja end—their total output being 24,000 cubic yards of stone.

Transportation of stone to the road side was effected by locally engaged animal carts, working under contract, supported by three Government one-ton lorries. Construction was retarded considerably during the great rains. The earth tracks from the quarries becoming impassable bogs.

The road was completed well under the estimate—a total expenditure of Rs. 75,204 being incurred during the year.

(6) Section 15. Limbani-Mzambaraoni-Mtemani Road (4.68 miles).

This loop road, commenced last year shortens the distance from Shake to Weti by 5 miles.

Two metalling units were employed, working from each end from quarries at Machengwe and Limbani respectively.

Stone was transported from the first quarry by three Morris lorries and locally engaged animal carts, transferred on completion of section 13, and from the second by Decauville track and hand-pushed trollies working with the grade.

Two bridges were built of reinforced concrete with clear spans of 20 feet and 12 feet at Machengwe and Limbani respectively at a cost of approximately Rs. 14,000.

Work was completed and opened to traffic in November after which "Colas" treatment was applied for a distance of 3.29 miles. The Weti unit then commenced the construction to the new standard width of the old road from Limbani to Mtemani, a distance of 73 chains. This was unfinished at the end of the year and should be completed early in 1928.

(7) Section 16. Kengeja-Kimbini Road (1.17 miles).

Location and survey were completed in June and the Foreman in charge of construction on the Kengeja end of Section 13 commenced work immediately.

It was decided to construct a well drained earth-road, 24 feet clear formation, side drains, and a super-imposed wearing surface 16 feet wide of the sand clay mixture. Armco 18 inches diameter culverts were, as usual, used where necessary for drainage.

The road was completed in August at a total cost of Rs. 12,474, which works out at £883 per mile. In spite of heavy rain and constant use by animal carts its condition has not suffered seriously.

(8) Section 20. Chake-Mwembeduka Road.

Instructions were received in July to proceed with the construction of a road between Mkoani and Chake Chake, thus establishing direct communication between the North and South of the Island.

The route decided on was *via* Chonga, Ngwachani and Mwembeduka, joining the Kengeja Mkoani Road at that point.

Survey and location, which owing to the many duties of the engineer-in-charge, were undertaken when time could be spared, and by the end of the year 4 miles of road had been aligned and plotted.

Construction commenced in August and by the end of December 126 chains of earth road, together with all permanent Armco culverts and one 17 feet span reinforced concrete bridge, had been completed.

To connect the Weshu, Weti and Mkoani Road directly and by-pass the narrow and devious streets of Chake Chake, 12.5 chains of road were surveyed skirting this congested area of the town.

Construction commenced in December, and 8 chains of earthwork were completed.

(9) Section 21. Mwembeduka-Chake Road.

Survey and alignment were commenced in July from Mwembeduka and the assistant engineer completed 4.87 miles before going on leave in the middle of August.

Construction commenced immediately, but owing to very heavy earthwork and later bad weather, progress was unavoidably slow—85 chains only being completed by the end of December. The earthwork on this road compares favourably in quantity with that on the Kengeja Mkoani Road.

It is hoped that a junction will be effected between Section 20 and 21 at the end of 1928, the distance between Mwembeduka and Chake Chake being approximately 12 miles.

2. *Financial Summary.*—The total funds allowed and total expenditure incurred in 1927 are shown below:—

	Rs.	Rs.	Cts
(A) Funds available.			
(1) 1927 Estimates	2,66,667		
Special Warrant	1,43,334		
(B) Overhead Charges.			
At 17.75 per cent		58,015	45
(C) Construction Expenditure.			
Section 9 Chake-Wesha Road		39	00
Section 10 Chake-Weti Road		22,423	93
Section 11 Weti-Matangatwani Road		4,270	82
Section 12 Mkoani-Mwembeduka Road		16,041	61
Section 13 Mwembeduka-Kengeja Road		75,204	13
Section 15 Limbani-Mzambaraoni-Mtemani Road		1,24,998	18
Section 16 Kengeja-Kimbani Road		12,473	58
Section 17 Telephone Construction		614	51
Section 19 District Roads in Pemba by Administration		302	00
Section 20 Chake-Mwembeduka Road		36,349	84
Section 21 Mwembeduka-Chake Road		34,083	70
		<hr/>	
		3,84,816	75
(D) Balance December 31st, 1927		25,184	25
		<hr/>	
	4,10,001	4,10,001	00
	<hr/>	<hr/>	

MECHANICAL TRANSPORT.
Fleet of vehicles in active service.

Type.	No.	Date put in- to service	Type of body fitted.	Purposes for which used.
Two-ton Daimlers Type C.B. 36 Solid Tyres	2	1919	Box. Two-ton stone capacity	Road Construction Z'bar
One-ton Fords ...	5	1925	Truck	" " Zanzibar
Guy Tractor ...	1	"	25-cwt. Box	" " Pemba
One-ton Morris Commercial	7	1926	Box. One-ton stone capacity	" " Zanzibar
One-ton Morris Commercial	1	"	Box. One-ton stone capacity	" " Pemba
Two-ton Daimlers Type C.J.A. 36 Solid Tyres	3	"	Lorry (side tipping)	" " Zanzibar
One-ton Morris Commercial	2	"	Truck	" " "
One-ton Morris ...	4	1927	Truck	" " Pemba
One-ton Morris ...	6	"	Truck	" " Zanzibar

GARAGE (ZANZIBAR).

Wolseley Car 15 h.p. ...	1	1921		Passenger and General
Wolseley Car 10 h.p. ...	1	1922		" " "
Motor Cycles Douglas 2'45 h.p.	2	"		General
Armstrong Siddeley Car 18 h.p.	1	1924		H.E. The Resident's Car
One-ton Ford ...	1	1925	Ambulance Ford	Ambulance Car
Morris Cowley Cars 10'11 h.p.	3	1926		Passenger and General
Side Car B.S.A. 7'70 h.p.	1	1927		General
Motor Cycle B.S.A. 3'49 h.p.	1	"		"

GARAGE (PEMBA).

Twelve-cwt. Morris ...	1	1927	General Utility Car (locally constructed)	General Utility Car
------------------------	---	------	---	---------------------

The following summary shows the mileage and average cost of running for vehicles used in Zanzibar and Pemba, on road construction and road maintenance such costs being debited against the votes concerned.

Type of Vehicle.	Total Miles run.	Average Cost per mile.
6 one-ton Ford Trucks	47,186 $\frac{1}{4}$	.44 $\frac{1}{4}$
20 one-ton Morris Trucks	1,16,221 $\frac{1}{2}$	.31 $\frac{1}{2}$
5 two-ton Daimlers	96,959 $\frac{3}{4}$	.41 $\frac{1}{4}$

The above costs include driver's wages, petrol, oil, other stores and repairs.

Garage.—The total mileage of the vehicles used for passenger and general use was approximately 57,818 miles. The cost of petrol amounted to Rs. 7,294, and for oil, spares and other repairs Rs. 6,677, a total of Rs. 13,971. This amount was debited to the Recurrent vote Maintenance of Vehicles.

REFUSE DESTRUCTOR.

Refuse Destructor.—The sum of Rs. 4,230 was expended on maintenance, purchase of fuel, oil and electric light.

Quantity of refuse burnt:—

1924	9,515 tons
1925	16,465½ tons
1926	11,228½ tons
1927	11,445½ tons

Number of carcass cremated:—

	1924	1925	1926	1927
Cattle	167	169	107	200
Donkeys	93	59	30	52
Camels	10	4	—	7
Goats	1,089	994	666	549
Sheep	70	44	1	12
Not specified	33	42	440	123

ACQUISITION OF HUTS, TREES AND LAND.

Rs. 1,43,938 have been spent for acquisition of land and compensation for trees cut as follows:—

	Rs.	Cts.
Purchase of land and house at Weti	...	50,500 00
Purchase of land at Ziواني	...	24,541 00
Compensation for house No. 1026	...	17,250 00
Compensation for trees cut under Road Maintenance Decree, 1923	...	13,115 16
Compensation for house No. 936	...	11,500 00
Purchase of land at Tibirizi Ndogo	...	4,900 00
Compensation for house at Weti	...	4,600 00
Purchase of shamba at Kianga	...	4,000 00
Miscellaneous compensations	...	3,535 00
Purchase of land at Mkoani	...	2,834 00
Purchase of land at Malindi	...	2,531 00
Purchase of land and house at Mkoani	...	2,242 50
Purchase of land at Weti	...	1,000 00
Compensation for house at Mkoani	...	948 75
Purchase of land at Chake Chake	...	440 00

Rs. 1,43,937 91

PUBLIC WORKS EXPENDITURE.

	Amount allowed.	Amount spent.	
	Rs.	Rs.	Cts.
A. Personal Emoluments	... 4,11,485	4,03,750	58
B. Other Charges:—			
Clothing	... 2,800	2,642	17
Drawing office materials	... 667	857	80
Incidental expenses	... 1,333	1,050	25
Passages	... 18,300	27,838	25
Travelling expenses and transport	... 22,667	23,615	71
	<hr/> 45,767	<hr/> 56,004	<hr/> 18
C. Special Expenditure:—			
Motor cycle and side-car combination	1,333	1,381	90
3 tar boilers	... 6,000	4,531	94
Stonebreaker and engine	... 12,000	10,894	43
2 complete sets of stocks and dies with taps (Whitworths)	... 800	222	78
Complete set of gas stocks and dies with taps	... 400	198	16
10-ton jack	... 66	65	58
Steel filing cabinets	... 1,333	1,068	74
Morries 12-cwt.-truck	... 2,666	3,350	89
10-ton steam roller	... 28,000	26,649	53
Portable two-throw power pump	... 2,133	—	—
Typewriter	... 375	322	38
Vulcanizer	... 2,120	1,673	59
New oil engine for Weti water-works	9,333	4,035	61
Opalograph reproducing apparatus	... 333	333	33
1 bicycle	... 160	160	00
Office furniture	... 40	40	00
	<hr/> 67,092	<hr/> 54,928	<hr/> 86

	Amount allowed.	Amount spent.	
	Rs.	Rs.	Cts.
D Public Works Recurrent:—			
Buildings.			
Maintenance of buildings ..	66,667	66,512	27
Maintenance of buildings at quaran- tine station ...	666	657	76
Installation of electric light in Government houses ...	8,440	8,480	78
Communications.			
Maintenance of roads and bridges ...	2,00,000	1,89,063	63
Maintenance of telephones, Pemba ...	2,227	2,211	46
Maintenance of vehicles ...	13,333	13,971	33
Maintenance of boats and tisharis ...	1,333	1,667	86
Transport ...	1,500	812	48
Drainage.			
Maintenance of drains and cesspools	10,667	8,465	96
Maintenance of swamp drainage ...	2,667	1,857	37
Lighting.			
Street Lighting ...	68,000	66,787	99
Maintenance of water supply ...	10,000	9,137	37
Miscellaneous.			
Maintenance of ice plant, Pemba ...	800	—	—
Loss and depreciation of stores ...	5,000	1,497	56
Furniture ...	3,333	5,492	03
Tools and plant ...	7,733	9,005	09
Maintenance of refuse destructor ...	5,333	4,230	56
Town clearing ...	1,333	1,216	81
Workshop expenses ...	4,000	3,819	71
Maintenance of cemeteries ...	1,333	980	99
Maintenance of miscellaneous works..	6,666	4,224	84
Unallocated stores incidental expenses	4,454	3,496	13
Camp equipment ...	667	739	22
Maintenance and clearing at dhobi station ...	300	161	53
	4,26,452	4,04,940	73

	Amount allowed.	Amount spent.	
	Rs.	Rs.	Cts.
E. Public Works Extraordinary:--			
Buildings.			
Latrines at Ziwani police lines ...	6,440	6,417	74
Additions to native and subordinates hospital at Zanzibar ...	40,000	42,283	13
Lepper settlement at Funzi Island ...	19,347	14,936	37
Additions to health office building ...	33,520	17,466	63
District schools in Zanzibar and Pemba	7,800	6,558	25
New custom house ...	33,333	2,311	55
Quarters for 12 clerks ...	32,653	22,272	16
Communications.			
Harbour works ...	6,66,666	4,96,684	86
Road construction, Pemba ...	2,66,667	3,84,817	25
Road construction, Zanzibar ...	4,00,000	3,23,645	25
New road (Gulioni-Darajani) ...	66,667	1,83,745	67
Water Supply.			
Water supply at Mkoani ...	7,867	6,488	30
Miscellaneous.			
Acquisition of huts, trees and land ...	45,120	1,43,937	91
Minor works ...	18,813	24,370	87
Surveys.			
Township surveys ...	16,427	12,105	45
Topographical survey ...	24,147	12,966	97

	Amount allowed.	Amount spent.
	Rs.	Rs. Cts.
Re-Votes 1926.		
Court for Weti ...		7,693 59
Anti-malarial drainage in Pemba ...		3,692 16
Prevention of pollution of Bububu water supply ...		9,758 45
Alteration and repairs to five district schools at Zanzibar and Pemba ...		2,030 00
Seven district dispensaries at Zanzibar and Pemba ...		3,931 50
Relaying 9" Government sewer ...		1,854 43
Houses for nine teachers ...		7,809 00
Structural repairs to offices at Bet-el-Ajaib ...		43,636 57
Latrines in quarters for native officials and headmen's houses ...		1,047 47
Three latrines in town ...		5,196 29
Modern sanitation in Government houses ...		555 34
Town planning ...		2,72,800 00
Extension of water mains in town ...	Cr.	1,879 40
		<hr/>
		16,85,467 20,59,131 16
		<hr/>

Stores and Materials.—Summary of transactoins in unallocated stores:—

	Receipts.		Issues.	
	Rs.	Cts.	Rs.	Cts.
Zanzibar	7,01,080	66	7,03,500	11
Chake Chake	1,15,470	99	1,50,485	73
	<hr/>		<hr/>	
Total Rs.	8,16,551	65	8,53,985	84
	<hr/>		<hr/>	

SURVEYS.

1. *Staff*.—Throughout the year the Staff has consisted of one Senior Surveyor, two European Assistant Surveyors, one European Draughtsman and one Indian Assistant Surveyor.

Mr. Campbell, Assistant Surveyor, left for England on February 8th on privilege leave, and returned to duty on August 10th.

Mr. A. Quardir Khan, Indian Assistant Surveyor, returned from privilege leave on February 2nd.

Mr. Lewison, Assistant Surveyor, left for England on privilege leave on August, 10th.

2. *Cadastral Progress*.—The Survey of Zanzibar City was completed in February.

Topographical.—The Field Staff commenced the Framework Traverse for the Topographical Survey of the Island on 1st March. All the roads, with the exception of that to Mdo, are completed, and the coast line from Pwani Mchangani on the N.E. to Zanzibar City via South and West is completed and plotted, permanent marks have been placed on all these traverses about one mile apart, to assist in any future development.

Excessive rains during the last two month of the year, has considerably reduced the out-put of work for those months.

3. *Office*.—The 1/480 Map of Zanzibar City has been completed, and 15 sets printed, consisting of 68 sheets each, have been supplied to various departments.

The 1/4800 Map has also been completed, and is now being printed.

4. *General*.—Many changes and improvements, have been made in the City since the several sections were completed, and a revision is already necessary, the most prominent of these will be picked up at odd times, if, and when, the Topographical work is held up by bad weather.

Health.—Has been very good, only 45 days have been lost through sickness during the year.

Cost.—The cost of township surveys in 1927 was Rs. 12,105-45, and topographical survey Rs. 12,966-97.

Establishment.—The European Staff approved for the Department was as follows:—

Director of Public Works
 Assistant Director of Public Works
 District Engineer
 Three Assistant Engineers
 Temporary Assistant Engineer
 Architect
 Accountant
 Senior Surveyor
 Two Surveyors
 Storekeeper
 Superintendent of Water Works
 Building Surveyor
 Surveyor Draughtsman
 Two Clerks of Works
 Overseer Mechanic
 European Mechanic
 Two Foremen of works
 Four Temporary Foremen of Works
 Temporary Labour Superintendent.

New Appointments.—Mr. C. F. Chambers, District Engineer, arrived from Uganda on transfer.

Transfers.—Mr. H. C. Platts, District Engineer, transferred to Tanganyika Territory on 23rd August.

Mr. W. L. Thompson, Temporary Assistant Engineer, transferred to Sierra Leone on 29th December.

Staff Stationed in Pemba.—District Engineer, Mr. H. C. Platts, (until he was transferred).

Assistant Engineer, Mr. W. R. D. Crarey, in charge from 1st August to 31st October.

Assistant Engineer, Mr. R. Thomson, in charge from 1st November to 31st December.

Temporary Assistant Engineer, Mr. W. L. Thompson, (until he was transferred).

Clerk of Works, Mr. W. H. Fraser.

European Mechanic, Mr. H. Smith.

Temporary Foreman of Works, Mr. W. H. W. Marshall.

Temporary Foreman of Works, Mr. W. Layde.

Temporary Foreman of Works, Mr. D. T. Lewis.

Temporary Labour Superintendent, Mr. A. Bostock.

Leave.—The following Officers of the Department were on leave during the year:—

Mr. S. P. Bland
Mr. C. F. Chambers
Mr. E. Wiltshire
Mr. R. Thomson
Mr. W. L. Thompson
Mr. P. C. Harris
Mr. I. B. Lewison
Mr. G. B. Campbell
Mr. P. A. H. Pettman
Mr. J. H. Bennett
Mr. W. J. Borrow
Mr. E. Cuss
Mr. W. H. Fraser
Mr. A. I. Griffiths.

In conclusion I should like to express my appreciation of the way the whole staff, both technical and clerical, have carried out their duties during the year.

H. J. H. STEDMAN,
Director of Public Works.

Zanzibar, 13th August, 1928.

REPORT ON THE ZANZIBAR HARBOUR WORKS FOR THE YEAR 1927.

1. *Progress.*—During the past twelve months work has proceeded in accordance with the programme arranged early in the year, when Mr. Mitchell of Messrs. Coode, Fitzmaurice, Wilson and Mitchell was in Zanzibar on his annual visit of inspection. The state of completion as at 31st December is approximately as anticipated and unit costs under all headings are within the estimated rates.

With the exception of dredging and a small amount of work which cannot be undertaken until the wharf subsidence has been definitely counteracted, work on the "A" portion of the estimate is practically completed.

As regards the "B" portion of the estimate, the erection of four electric wharf cranes, the construction of roads, and erection of the first transit shed are well advanced.

2. *Remedial measures in connection with subsidence.*—Work on the completion of the outer portion of the wharf and the second transit shed has been held up throughout the year on account of the remedial measures which became necessary in consequence of the subsidence of that portion of the structure, which took place in 1926. Unavoidably the interval has been occupied in detailed observation, including trial boring, re-driving of test piles, and examination of movements under conditions of heavy test loading, in order that the consulting engineers may be in a position to arrive at a decision as to the efficacy of the measures already undertaken and the necessity or otherwise for further expenditure under this head.

3. *Expenditure.*—The total actual expenditure on Harbour Works for the twelve months after allowing for the value of unworked material in stock is Rs. 7,46,158.

The total expenditure to date inclusive of value of material in stock is Rs. 17,76,074, leaving an unexpended balance of the consulting engineers' estimate of Rs. 10,43,171.

The depreciated value of plant on hand, assuming a useful life in most cases of under ten years, is approximately Rs. 4,00,000.

G. E. HOWORTH,
Resident Engineer

Zanzibar, 28th February, 1928.

